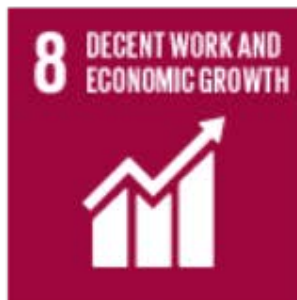


Ten Ingredients to embed Education for Sustainable Development in Taught Courses



**Dr Andrew Reeves, Dr Ros Lishman,
Dr Claire Lerpiniere, Dr Kutoma Wakunuma**
DMU Teaching and Learning Conference
11th September 2019

A new challenge?



Aim: Make it Easier to Make This Reality



“We will equip students and staff with an understanding of the **challenges of sustainability and sustainable development**, and will approach learning, teaching and assessment mindful of the **opportunities to contribute locally and globally** to the public good and environmental futures as well as of our impact on a resource-limited world.”

DMU University Learning Teaching and Assessment Strategy, 2018

Background


- ESD Forum
 - 30+ staff across the University
 - Academics, DSU, Sustainability team
- ESD Academic Innovation Project in 2018/19
 - Support six programmes to embed ESD
 - “Tell us what we need to do!”
 - See conference Poster

Sustainable Development and Taught Courses

Exploring links and enhancements with six DMU programmes
Dr Andrew Reeves, Institute of Energy and Sustainable Development (IESD), De Montfort University, Leicester, UK.

Context: Addressing the SDGs in Universities

- Universities have a key role to play in addressing Sustainable Development, an agenda which addresses societal challenges such as poverty, climate change, biodiversity loss and clean technological development.
- In a 2018 National Sustainable Development Goals (SDGs) survey, 67% of universities agreed to work towards addressing the agenda, with 10% committing specific targets to be achieved by 2030.
- All 17 SDGs have been achieved in the UK's 2018 Strategic Plan as a key focus for contributing to the public good through teaching, research and external engagement activities.
- Inspiring upon the SDGs through teaching contributes directly to SDG Target 4.7, which calls for educational institutions to conduct education for Sustainable Development (ESD) in their activities.
- It is a positive contribution to the targets from a 2018/19 Academic Innovation Project (AIP) which aimed to support six DMU programmes to integrate ESD into their teaching and learning activities.
- The project was developed by DMU's IESD Forum, a collaborative open network of 250 staff.



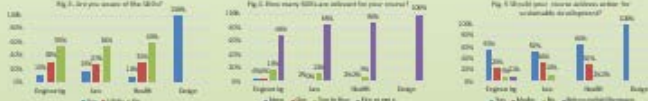
The View from Programmes: Diverse Challenges, Pedagogic Strengths

- Programme staff were engaged through 6.5 and small group meetings (between 3 and 12) and open rooms at the start and close of the project.
- A range of programme specific challenges were highlighted (Fig. 1).
- Existing strengths and future opportunities were identified through a self-reflective tool as “10 steps for Embedding Education for the SDGs”.
- Strengths frequently related to pedagogic approaches that enable experiential learning.

Student Engagement: Low Awareness, Strong Motivation

- Students on five of the six programmes were surveyed to assess their awareness of and potential engagement with sustainable development, using the widely used current awareness and potential engagement with sustainable development (ESD) survey, which is based on a 2010/11 assessment and has been revised at least a few weeks previously (Fig. 2).
- Other potential work on average of 10% a year, most students (50%) use 5 or more pages as relevant (Fig. 2).
- More students on each programme thought their course should address action for sustainable development, in a survey of 1200 (Fig. 3) through the student-led survey (Fig. 3).

Programme	Engineering	Law	Health	Design	ESD
Are students	2	3	3	2	6
Are programs	11	10	21	1	120
Level of study	1 (level 1 & 2)	1	1 (level 1 & 2)	1	



What Support Approaches worked well?

- Embedding ESD into existing programmes.
- Use of the ESD survey to identify areas for improvement.
- The tool was used to identify strengths and potential enhancements.
- This has been used to inform the development of the ESD survey (Fig. 2) which will be used for engagement in 2019/20.
- Use of the ESD survey to identify areas for improvement.
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- Use of the ESD survey to identify areas for improvement.

Conclusions and Next Steps

- The project has generated learning that will inform a future plan to embed ESD in taught courses at 6 other DMU schools.
- Several programmes have started using the ESD survey to inform their teaching and learning activities from an ESD report, available on the website www.dmu.ac.uk/iesd.
- By using the ESD survey to identify areas for improvement, gathering students' views and resources to inform sustainable development.
- Resources from the project and case studies are available from www.dmu.ac.uk/iesd.

ESD Project: Aim and Intended Outcomes

AIM: To enable and inspire students, staff and DMU's wider community to collectively learn about and act on sustainable development and the SDGs, inspiring action now and in the future, professionally and through active citizenship

OUTCOMES:

- 1. Knowledge:** Awareness and understanding of the SDGs and sustainable development, applying these to disciplines, professions and citizenship.
- 2. Competencies:** Ability to act for sustainable development, through ways of thinking and collaborative working, through citizenship and professionally.
- 3. Transformative Learning:** Challenge unsustainable paradigms, critically reflect on experience and develop a personal commitment to sustainability.
- 4. Taking Action:** Enable individuals and teams to act to support sustainable development and prevent unsustainable practices, at DMU and in the community.

Examples from Practice

- Dr Ros Lishman
 - Politics in Action
- Dr Claire Lerpiniere
 - Sustainability and Textile Design

Case Study: Using the UN's SDGs in the teaching of Human Rights Law (Dr Irene Antonopoulos, FRSA)



The Human Rights (LLP2002) module links the UN's Sustainable Development Goals (SDGs) to human rights issues, helping students to link them into their working practice as well as their everyday lives. What was the programme or module it is the...

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Case Study: Using the SDGs to Research ICT Issues within Developing Countries (Dr Kutoma Wakumuna)



Case Study: Embedding the SDGs into Pre-Sessional English in the centre for English Language Learning (CELL) (Phil Rule)

The Pre-sessional English programme in the Centre for English Language Learning (CELL) teaches International students English reading, writing, listening and speaking skills. The main goal is to prepare them for the academic year, meaning they are also taught aspects of...

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Case Study: Using engineering designs to solve SDG related issues in communities (Dr Leticia Ozawa-Meida and Dr Kegong Diao)



This 2nd year module uses the Engineering without Borders (EnWB) challenge for groups of students to create design solutions for SDG related issues in communities. What was the programme or module? The Project Management (ENWB2010) module. It is



Street Law is an extra-curricular activity that helps to educate students and others on the law through the use of mock trials, and presentations for schools and the community. Frequently the issues worked on in Street Law relate to the...

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How do you embed the SDGs in a taught course? Two upcoming DMU ESD Forum events



DMU's Education for Sustainable Development (ESD) Forum are hosting two events on embedding sustainability into education. DMU aims to embed the education for the Sustainable Development Goals (SDGs) across the curriculum, but many staff and students wonder how this can...

DMU case studies from <https://esdg.our.dmu.ac.uk>

Reverse Engineering Products – Teaching Design with the SDGs

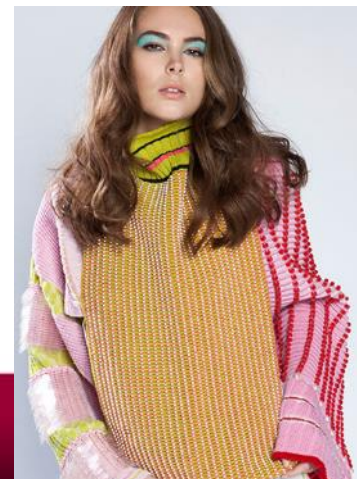


Dr Claire Lerpiniere – School of Design
clerpiniere@dmu.ac.uk

'The Story of a Garment'

The briefing

- Explore an existing product, and consider how you could innovate through the design process
- Work backwards from the completed garment, to the initial inspiration, to design something innovative and sustainable
- Identify your own interests and priorities in relation to the UN Sustainable Development Goals



Seminars to support creative problem-solving

- Garment life cycle
- Sustainability and ethical issues in fibre, textile and garment production
- Global and local supply chains from fibre to consumer
- Emotional connection
- Durability and longevity
- Textile design training and analytical skills



Step 1: Production and manufacturing

Where was the product manufactured?

- Can you tell from the label or can find the producer/retailer online?
- What can you find out about the textile industry in the country of origin?
- Can you identify any benefits/problems within the manufacturing location?



Step 1: Production and manufacturing

Why were the materials selected?

- Was it for functional purposes?
- Have they been selected because they are cheap or luxurious?
- Were the materials selected for decorative purposes? Are they practical, will the materials last?
- What fibres / yarns / trims could have been used instead? Are the materials sustainable? Are they ethically sourced?



Student Project:

Step 1 Production and Manufacturing

ZARA

- Woven fabric with a traditional tartan design, blend of :
 - 69% polyester
 - 29% viscose
 - 2% elastane
 - Made in Portugal



Student Project: The fabric

The exact suppliers for polyester, viscose and elastane fabric or trims used to manufacture the dress are not disclosed.

Zara scored 36% on the 2017 Fashion Transparency Index.



Fig 1: Fabric processing at an Inditex supplier in Portugal.

In 2016, we worked with more than 1,800 suppliers in over 6,500 factories.

fabric	932
cutting	306
manufacturing	4.269
dying and washing	573
printing	216
finishing	636

INDITEX SUPPLY CHAIN TRACEABILITY 2016 +

Student Project: Why this dress?

- I first fell in love with the traditional and timeless grey tartan design and the feel of the fabric.
- It has a bit of a Balenciaga inspiration, that I love, in its design with the puffy cascade sleeves, a unique tailoring in my wardrobe.
- It feels and wears very comfortably and it has a heavy weight and luxurious feel.
- It has a timeless design.
- It was on SALE! £19.99. Original price, £59.99



Step 3: Concept Board

From the brief



- If you were to redesign the product, what would you do? What would happen if you used completely different materials?
- Are there any particular issues that need resolving, to make it a better garment, more sustainable, or part of the circular economy?
- How could you extend the life of the garment, so it doesn't become 'fast fashion' and discarded after 7 wears?

Include: fabric swatches, images, colour, texture, detailing, fastenings, functional elements, decorative elements, ideas, and imagination



Student Project: Redesign Concept Board

I would add pockets and use Newlife Yarn to create the Tartan Weave, instead of the current fabric which is:

- Polyester (disperse dyes) – retains its shape and resists wrinkles
- Viscose (direct dyes) – it gives a soft and smooth finish
- Elastane (acid dyes) – gives the woven fabric a permanent elasticity
- The fabric blend is not widely or easily recyclable.

End of lifecycle:

The dress could be upcycled, as it has an abundance of fabric for a potential redesign, or recycled, if using Newlife Yarn



Fabric



■ Polyester ■ Viscose ■ Elastane ■

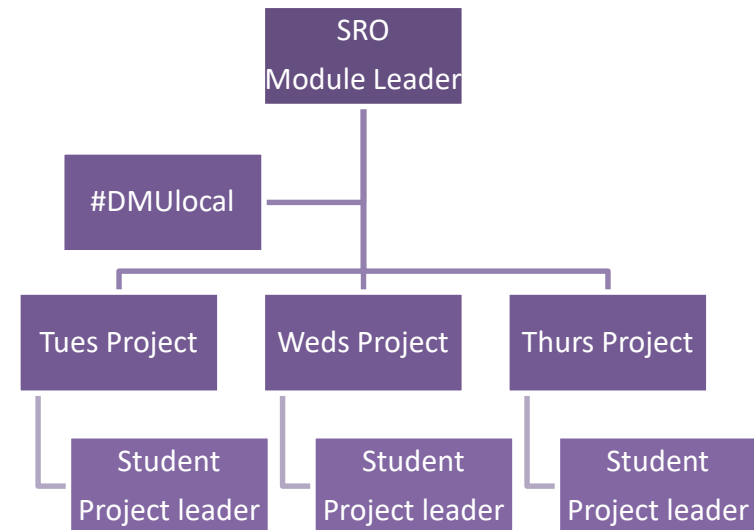
Politics in Action

Politics in Action

POPP2515

2018/19

- **Module:** 15 credit, year long, compulsory/optional for UG f/t politics /IR and joints
- **Students:** approx. 80
- **Groups:** 3 workshops decided by timetabling (approx. 20-30 students in each)
- **Teams/projects:** consultation with course reps - preference for self-selecting teams with self-selecting team leader, 1 project per workshop
- **Staffing:** Module leader, guest lecturers, DMUlocal
- **Timetable:** Term 1: weekly 2 hour workshops; Term 2: fortnightly 2 hour workshops; Fortnightly self-directed learning – 1 hour.



UN SDGs: workshop activities

- **Week 1:** questionnaire to students included question about UN SDGs
- **Week 3:** critical discussion and activities on UN SDGs
- **Weeks 5-7:** groups of approx. 5 students scoped an idea for a local project based on UN SDGs
- **Week 8:** students presented outline project proposal and voted on preferred project(s); gained greater awareness of local relevance of UN SDGs
- **Week 21:** NUS Teach-In: pledge and review of knowledge/understanding on UN SDGs gained on module



- Reflective activities also in weeks 15, 23, 25

Module assessment

Personal reflection

- Students choose 1 assignment type
- 100% of module mark
- Deadline: end of term 2
- Need to submit some text / references to Turnitin - all types
- Multimedia files submitted to Turnitin or DMUReplay

Assessment Criteria

1. **Local politics in action (20%):**
engagement with the concept of politics in action and the application of the UN SDGs at a local level
2. **Skills development (50%)**
3. **Communication (20%)**
4. **Academic skills (10%)**

Written 'digital'
report/essay
2,500 words

Recorded
Presentation
8 slides/15 mins
voiceover

Podcast & script
15 mins

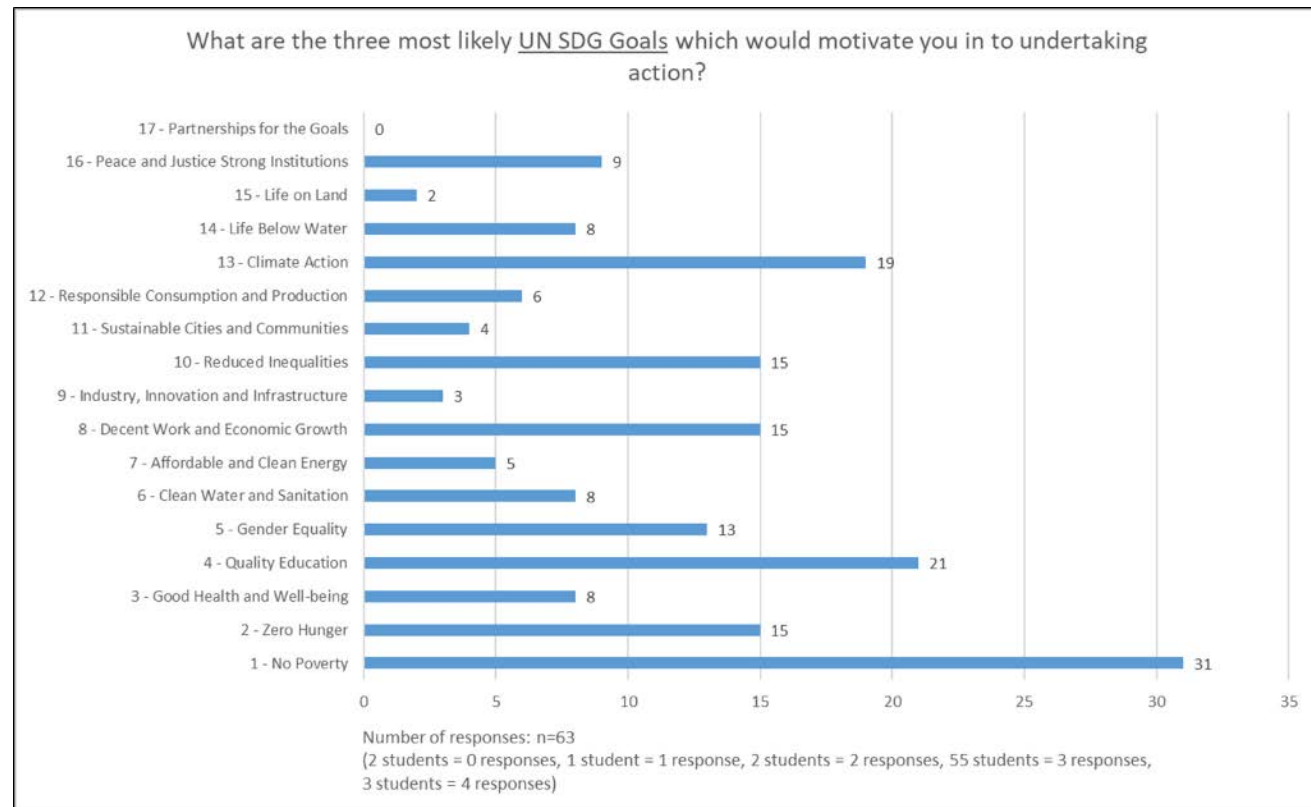
Video & script
15 mins

Poster
A1

UN SDGs: areas of interest & motivation

Action and politics

- activism
- belonging to a political party
- community development
- community engagement
- direct action
- individual and collective action
- influencing policy and politics to transform public decision-making
- large-scale campaign advocacy
- legal rights education
- local and global action
- neighbourhood organising
- online campaigns
- political lobbying
- public engagement



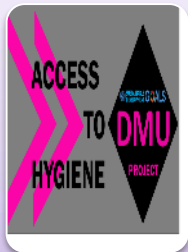
Data source: Week 1 Questionnaire to students

Projects



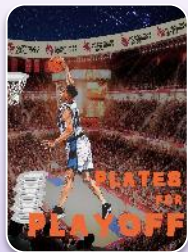
Zero Waste

- Raising awareness about waste reduction
- Poster, leaflet, video, debate event, social media
- SDGs 12 & 14
- <https://twitter.com/zerowastedmu>
- <https://www.instagram.com/zerowastedmu/>
- <https://www.youtube.com/watch?v=ugjVIFsj8hE&feature=youtu.be>



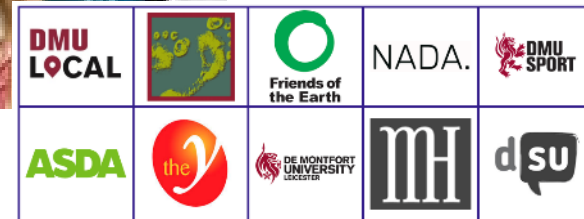
Access to Hygiene

- Raising awareness, collecting and distributing personal hygiene donations
- Leaflet, poster, collection box, collection days (Asda), donation drop off
- SGDs 3 & 6
- <https://twitter.com/accesstohygiene>
- <https://www.instagram.com/accesstohygiene/>
- <https://www.facebook.com/Accessstohygiene/>



Plates for Playoff

- Fundraising event, buying food donations, volunteering at foodbank
- Poster, connection with DMUSport, volunteering at foodbank
- SDGs 2 & 3



Knowledge, skills & experience gained on the projects by students

Zero Waste	Access to Hygiene	Plates for Playoff
<p>Creating leaflets and posters Engaging with local Friends of the Earth group Gaining knowledge about waste reduction Gaining volunteering hours Making a video Managing social media Marketing and communications Planning & organising an event Raising awareness about reducing waste Working in teams Working with #DMUlocal Working with/as project leaders Working with DMU staff Working with local businesses</p>	<p>Collecting and distributing donations Creating a DSU society Creating leaflets and posters Gaining knowledge about hygiene and homelessness Gaining volunteering hours Managing social media Raising awareness about period poverty Working in teams Working with #DMUlocal Working with/as project leader Working with DSU Working with The Y/Dawn Project</p>	<p>Creating a poster Gaining awareness about food poverty Gaining knowledge about food banks Gaining volunteering hours Managing social media Organising a rota Planning an event Working in teams Working with #DMUlocal Working with/as project leaders Working with DMU Sports Working with Manor House</p>

Politics in Action: ESD outcomes

- **Knowledge:** many students had little/no awareness and understanding before module; developed critical engagement and reflection; feeds into other modules and engagement activities; 100% (n=40) of students in wk 21 confirmed module had contributed to their understanding and knowledge of UN SDGs
- **Competencies:** organisation of the module enables students to develop collaborative thinking and working – linked to employability/graduate skills (QAA Politics & IR Subject Benchmark); gained volunteering hours
- **Transformative learning:** many examples where involvement in module and projects has changed behaviour and commitment to sustainability
- **Taking action:** focus of the module is to raise awareness of relevance and application of UN SDGs at a local level and to facilitate local action; emphasis on practice (rather than theory – which the students appreciate); students proud of achievements

Ten Ingredients: a starting point for ESD

- A thinking tool to frame conversation:
 - “Ten Steps towards Education for the SDGs” – one sheet of A4/A3
 - Ten potential actions rated (0 not done; ½ partially; 1 strongly)
 - Leads to identification of good practice and enhancements

No.	Action
1	Students develop critical thinking skills
2	Students develop interpersonal and collaborative problem-solving skills
3	Key concepts of sustainable development are introduced
4	The SDGs are addressed in class, either implicitly (½) or explicitly (by name, 1)
5	Key course concepts are put in a wider social, historical or ecological context
6	Ethics and values are linked to the subject matter in the course
7	The course minimises resource use and negative social/environmental impacts
8	Students are able to take real-world action for sustainable development
9	The course challenges unsustainable ‘business as usual’ ways of thinking
10	SDGs or sustainable development are in learning outcomes and assessment

COMPETENCIES

KNOWLEDGE

TRANSFORMATION

TAKING ACTION

Give it a go for a course you know

<https://esdg.our.dmu.ac.uk/teaching-resources/pilot-toolkits/>

0 = not done; ½ = partially; 1 = done strongly

No.	Action
1	Students develop critical thinking skills
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Accessible Initial Steps

- Participate in the **NUS SDG Teach-in**
 - One week, national event, February 17-21 2020
 - Or a session in UN Week (October 21-25 2019)
- Use SDGs as a **topic or context** for assessments or in-class activities
 - E.g. Social Enterprise; Electronic Engineering
- **Share** your existing practice
 - Complete the case study template on <https://esdg.our.dmu.ac.uk>
- **Engage** colleagues and students
 - Discuss links to sustainability; complete the template

Further Resources

- Case Studies
- Introductions to ESD and the SDGs
- Posted on <https://esdg.our.dmu.ac.uk>

Case Study: Using engineering designs to solve SDG related issues in communities (Dr Leticia Ozawa-Meida and Dr Kegong Diao)



This 2nd year module uses the Engineering without Borders (EwB) challenge for groups of students to create design solutions for

Case Study: Using the SDGs to Research ICT Issues within Developing Countries (Dr Kutoma Wakunuma)



Dr Kutoma Wakunuma created this new module to contribute towards DMU's goals surrounding Social Good. It allows students to research the ICT issues of a chosen country, in the context of the UN's Sustainable

Further Thinking Tools

- SDGs and Competencies
 - See <https://esdg.our.dmu.ac.uk>

Linking SDGs to Taught Courses: Worksheet

The UN Sustainable Development Goals (SDGs) are a major area of focus at De Montfort University across all of the university's activities.

DMU aims to embed Education for the Sustainable Development Goals (ESDG) across all of its taught programmes. One aspect of this is linking curricula to the SDGs where appropriate. For other aspects, such as developing students' competencies to act on sustainable development, [see here](#).

The SDGs can be viewed at several levels of detail:

- The overall purpose of Sustainable Development, to meet "the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987)
- The 17 specific goals, such as eliminating poverty (SDG#1) or reducing inequalities (SDG#10)
- Specific measurable Targets (x169) and Indicators (x232) associated with the goals (see UN, 2018)

This tool aims to enable structured engagement with the question of how to embed the SDGs in taught courses via some short questions and a template for noting answers. Before trying out the tool, it is worthwhile to familiarise yourself with [the SDGs](#), and [Education for the Sustainable Development Goals](#).

This tool is a pilot resource developed by DMU's Education for Sustainable Development Forum, as part of a project to enable programmes to enhance linkages to sustainable development. Feedback and suggested improvements to the tool are welcome – please email sustainability@dmu.ac.uk



Sustainability Competencies: Thinking Tool

"Competencies in Sustainability" complement the UN Sustainable Development Goals (SDGs) as a core way of thinking how a taught course can contribute to Sustainable Development. They enable a focus on how course participants develop the competencies that can play a key role in action for sustainable development. They are also useful as a trigger for reflection for teaching staff regarding their own competencies in relation to sustainability.

For a short overview of the competencies concept, see [Redman \(2018\)](#) (2-page summary) [Wiek \(2016\)](#) (6-page summary), or for a lengthier rationale and discussion, see [Wiek et al. \(2011\)](#).



Q1: How are Sustainability Competencies currently embedded in the course?

Consider strengths and weaknesses linked to: Intended Learning Outcomes; Course Materials; Learning Activities; Assessment.

OVERALL <i>i.e. developing competencies to act on sustainable development in the context of the subject discipline</i>	
Systems Thinking	
Futures Thinking	

Summary

- Embedding Education for Sustainable Development is about developing **knowledge, skills and attributes** to make a difference on sustainable development issues
- Most courses are **doing this already** to some degree
- The Ten Ingredients help to identify **existing strengths** and potential **areas for enhancement**
- **Find out more:** <https://esdg.our.dmu.ac.uk>
- **Get involved** in the DMU ESD Forum (email: areeves@dmu.ac.uk)