

Adopting the CoDesignS ESD Framework for Integrating Sustainability Competencies

Tools and Lessons from a Bootcamp Experience

Dr. Theresa Nicholson

Reader, Natural Sciences, Manchester Metropolitan University

ACKNOWLEDGEMENTS: **Liz Price** and **Valeria Vargas**
(Manchester Metropolitan University), **Maria Toro-Troconis**
(Association of Learning Design and ESD)



Association for Learning Design and ESD

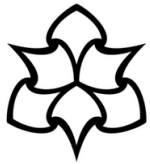
CoDesignS ESD Bootcamp



AUS
American
University
of Sharjah



University
of Glasgow



**Manchester
Metropolitan
University**



**THE UNIVERSITY
of EDINBURGH**



unesco

Instituto Internacional para
la Educación Superior en
América Latina y el Caribe



CoDesignS App!



UNESCO (2017), QAA/Advance HE (2021), Toro-Troconis *et al.* (2019),
Lewis (2020). Bootcamps = ALDES, UNESCO-IESALC

<https://aldesd.org/our-bootcamps/>

CoDesignS ESD Framework: Three Key Ingredients



UNESCO (2017), QAA/Advance HE (2021), Toro-Troconis *et al.* (2019), Lewis (2020). Bootcamps = ALDESD, UNESCO-IESALC

<https://codesignsesd.org/toolkit/>



KEY COMPETENCIES FOR SUSTAINABILITY

Ways of Thinking, Ways of
Practicing and Ways of Being



SPECIFIC LEARNING OBJECTIVES FOR THE SDGS

Targeting the cognitive,
socio-emotional and
behavioural domains



TRANSFORMATIVE PEDAGOGIES AND TEACHING METHODS

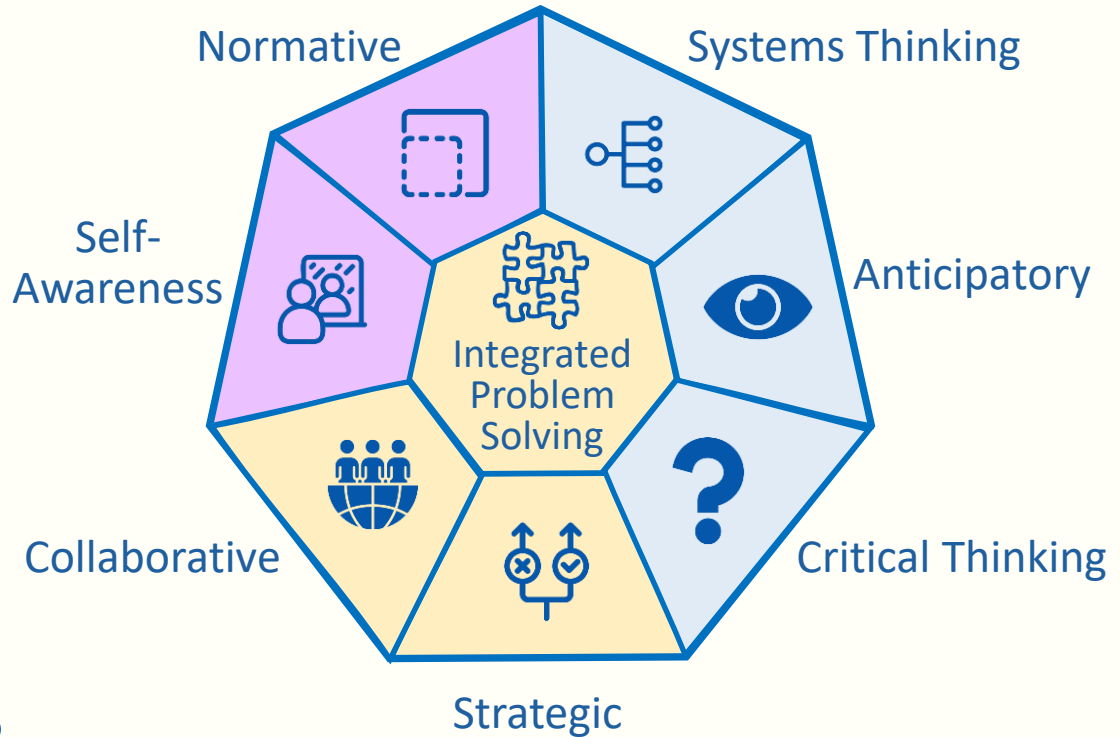
Participatory enquiry/Action
research, Action
competence..



1. Key Competencies for Sustainability

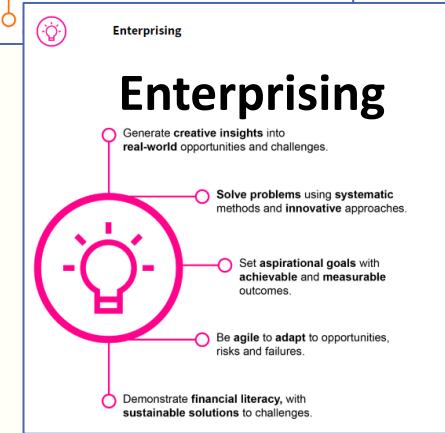
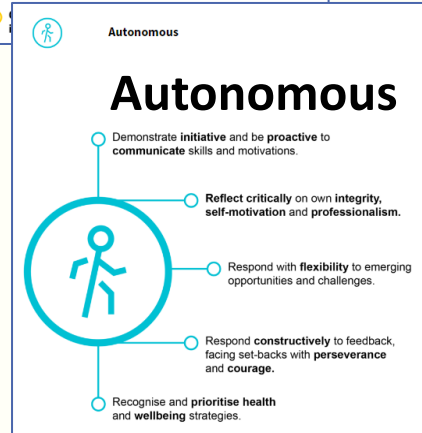
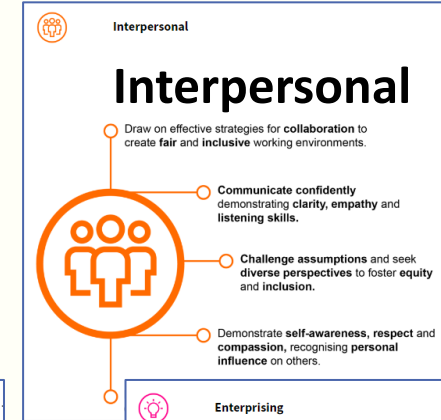
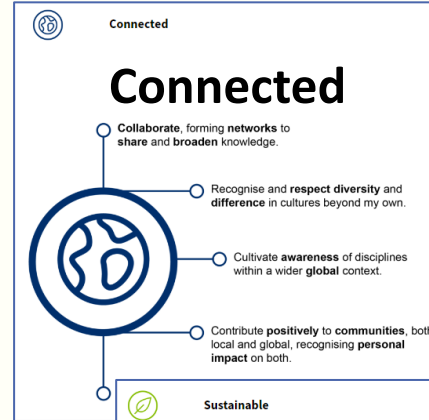
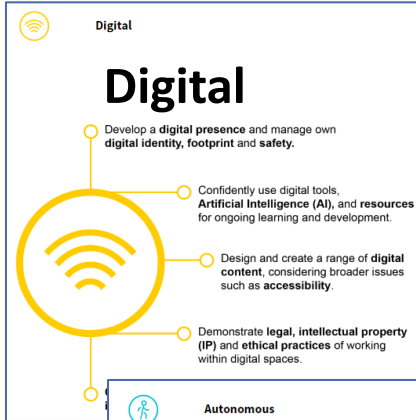
Learning Design

- Map and assess distribution of Key Competencies
- Is there balance?
- Is there is scope for integrating other KCs?
- Can we highlight links with graduate attributes?



Adapted from Rosén *et al.* (2019) and UNESCO (2017)

Manchester Met Graduate Attributes



2. Specific Learning Objectives for the SDGs

Sustainable Development Goals

- Are we addressing relevant SDGs?
- Can we integrate other SDGs and highlighting complex inter-connectedness?

Head • Heart • Hands = 3H

- Are we engaging students cognitively, socio-emotionally, behaviourally?
- Is there balance in the 3H?

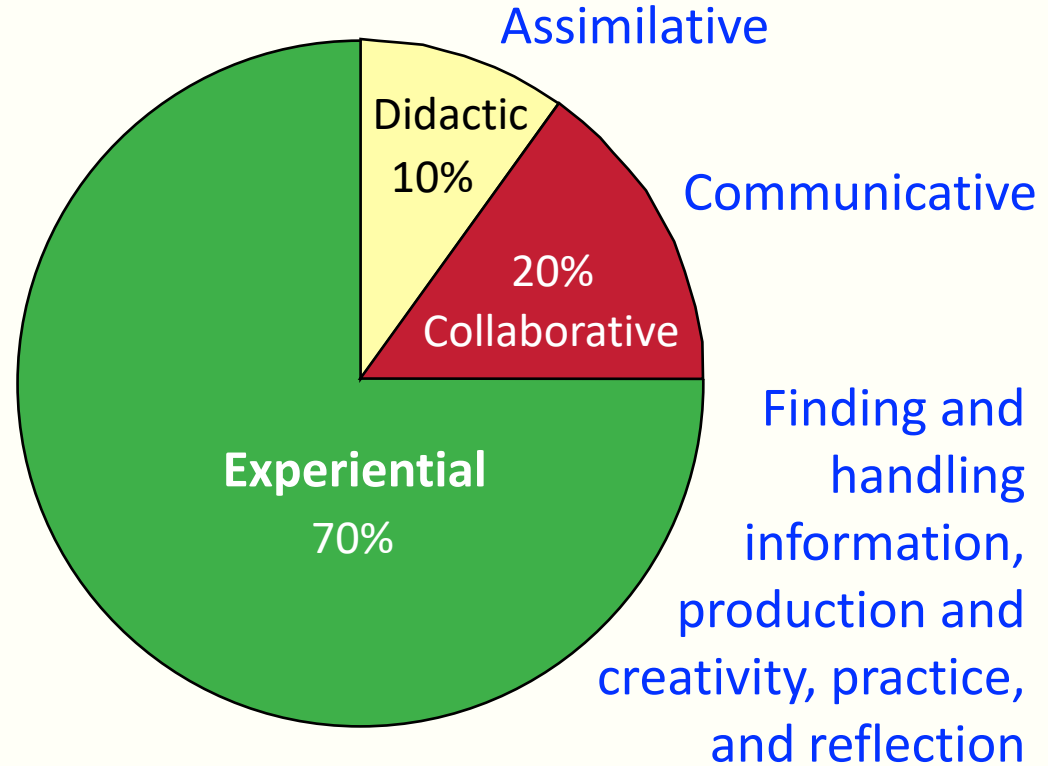


3. Transformative Active Learning

Learning Activity Types

Range, variety and
balance against idealised
breakdown (OU, 2021)

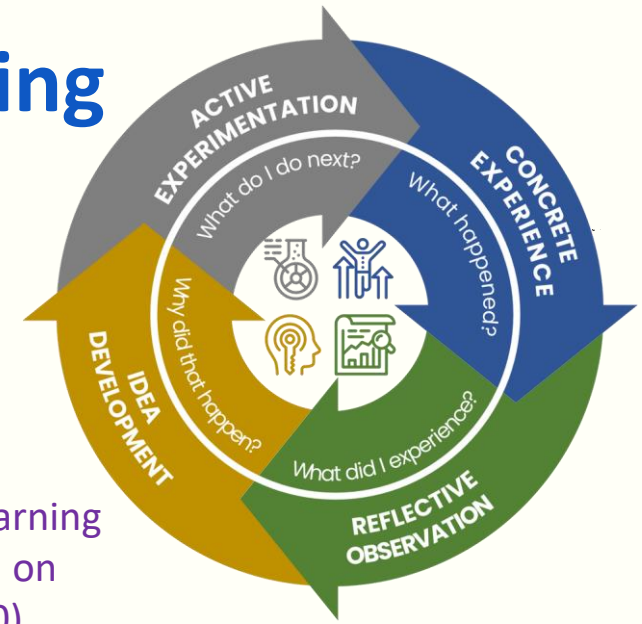
*"I see and I forget, I
hear and I remember,
I do and I understand"*
(Confucius).



3. Transformative Active Learning

Transformative Pedagogies

- Aligned outcomes, activities, assessment
- Experiential active learning methods



Experiential learning
cycle (based on
Kolb (1970))

Object Based
Learning

Gibbs Cycle
of Reflection

Learning
Landscapes

Enquiry-Based
Learning

Work-Based
Learning

Jigsaw
Classroom

Flexible
Assessment

Play and
Games

Place-Based
Education

VR and AR

Co-creation
Partnerships

World Café

CoDesignS ESD Toolkit Planner

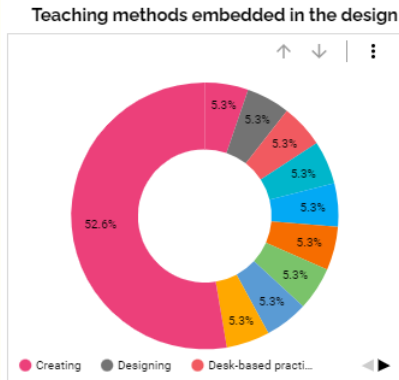
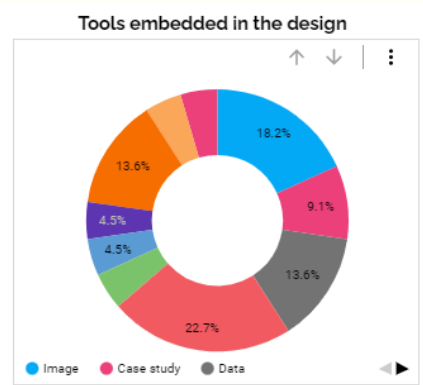
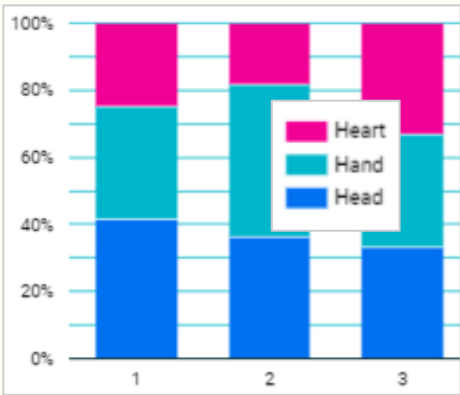
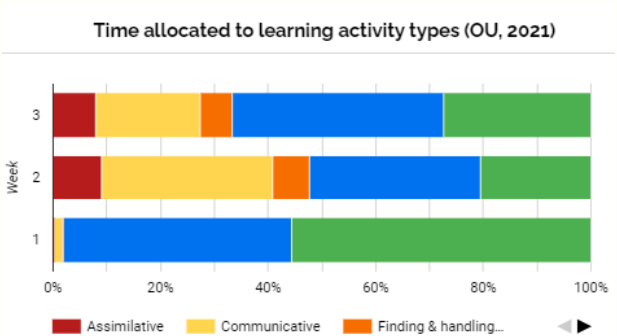
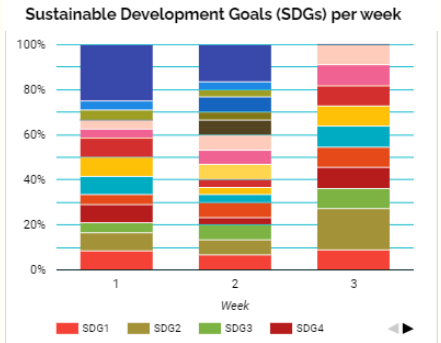
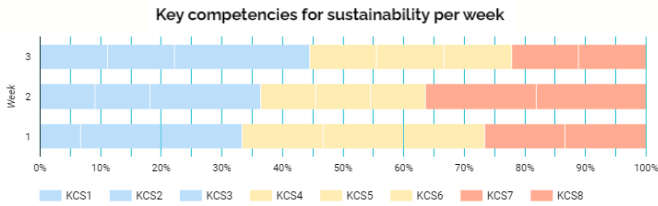
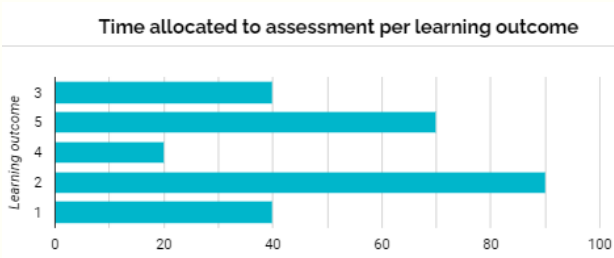
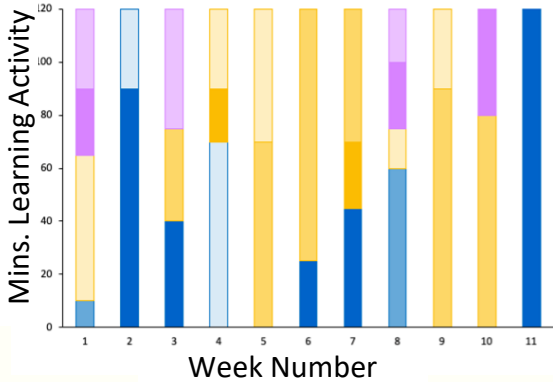
Learning activities		Learning outcomes		SDGs		KC		3H		Teaching methods		Learning types					
B	C	F	G	H	I	W	X	Y	Z	A	AE	AF	AG	AJ	AK	AL	AM
Learning activities	Learning outcome	SDG1	SDG2	SDG3	SDG4	KCS1	KCS2	KCS3	KCS4	KCS5	Head	Heart	Hand	Teaching methods	Assimilative	Finding & handling information	Communicative
WEEK 1: Exploration Week																	
What are your expectations of this module?	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1-2-1 Tutorial	200	20	20
Exploration activity	1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Creating	20	15	30
Reflective activity	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Debate	1000		
Quiz 1	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Designing		60	60
Assignment 1	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Desk-based practical		20	40
Webinar	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Discussion			60
WEEK 2: Topic A																	
What do we mean by..?	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Enquiry-Based Learning			120
Exploration activity - Section A	3	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Field-based activity	20	15	30
Exploration activity - Section B	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Flipped classroom	20	15	30
Reflective activity	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Group work			
Quiz 2	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Laboratory practical			
Assignment 2	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Lecture			
Webinar	5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Object based learning			60
WEEK 3: Topic B																	
What do we mean by..?	Select	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Practice-Based Activity			20
Exploration activity	Select	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Problem-Based Learning	20	15	30
Reflective activity	Select	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Project work			
Quiz 3	Select	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Small group tutorial			
Assignment 3	Select	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Testing	30		

The CoDesignS ESD Dashboard

<https://codesignsesd.org/codesigns-esd-toolkit-planner/>

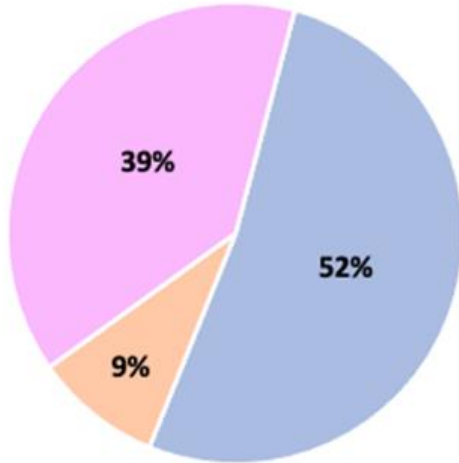


Total time allocated
7.00

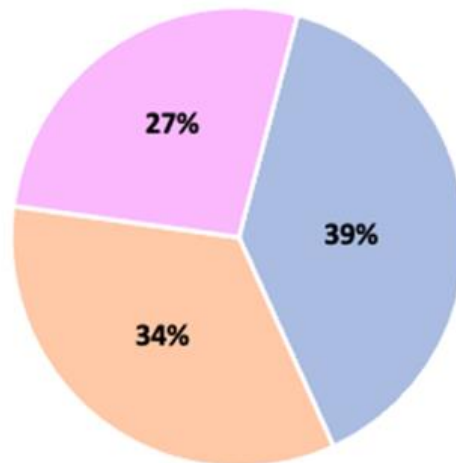


Dashboard Analysis

Pre-design



Post-design



- Ways of Thinking
- Ways of Practicing
- Ways of Being



Enterprising




Digital

Strategic Commitment



**ENABLING STRATEGY
LEADERSHIP IN
SUSTAINABILITY
2022–2026**



OUR STRATEGY

Education at Manchester Metropolitan University defines a student journey that is distinctive as it is transformative.

This distinctiveness is rooted in our comprehensive portfolio of student experience-oriented programmes, our diverse range of active pedagogies and our highly personalised student experience, all supported by our sustained mission and values.

Our teaching is both research and practice-led, leveraging our dual interconnection and our connectivity to industry and broader stakeholder networks. The inclusive and transformative community that emerges from this unique learning ecosystem defines Manchester Metropolitan University as a special place to learn, grow and develop.

Our new Education Strategy comprises nine interrelated elements: one of these defines our sense of place and learning environment. These characterise our learning community and reflect our values-based educational approach, and how we intend to live these values that we intend to invest in during the coming years (see Figure 1).

Every element is supportive of the others, together forming a learning community where belonging and opportunity are realised throughout the student experience.



Figure 1: The Manchester Metropolitan Education Strategy

<https://tinyurl.com/MMUEdStrat>



<https://tinyurl.com/LSStrategy>



Embedding Education for Sustainable Development (ESD)

Introduction to Embedding ESI

Step 1: Key Competencies for Sustainability

Step 2: Sustainable Development Goals

Step 3: Learning Domains

Step 4: Learning Activity Types

Step 5: Transformative Pedagogies

Learning Design and Analysis



Engagement and Evaluation Strategy

Level 4

ESD embedded in majority modules,
Framework used *as standard*

Level 3

ESD embedded in 30-50% modules,
staff using CoDesignS Framework

Level 2

ESD embedded in at least 1 core
module per course

Level 1

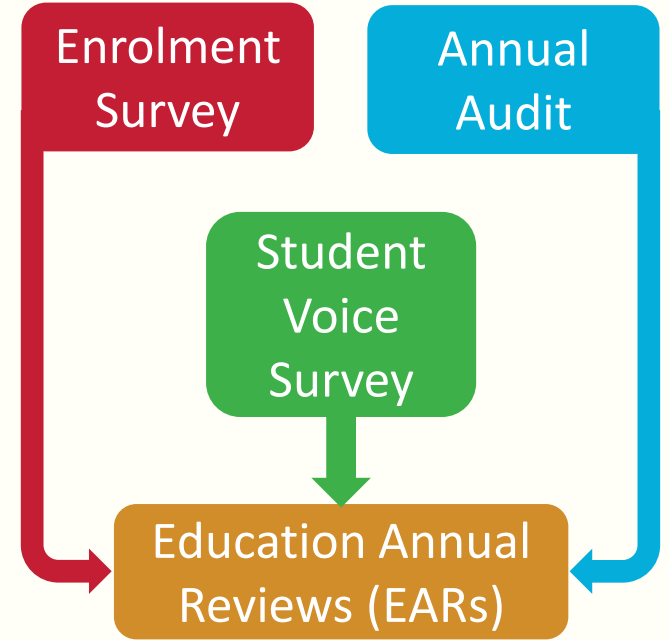
Awareness and understanding of ESD
and its wider context

Enrolment
Survey

Annual
Audit

Student
Voice
Survey

Education Annual
Reviews (EARs)



Adopting the CoDesignS ESD Framework for Integrating Sustainability Competencies

Tools and Lessons from a Bootcamp Experience

To Conclude.....

1. Equipped as change agents, decision-makers of the future
2. CoDesignS principles align with our aspirations for learners
3. Developing learners' conceptual knowledge and understanding
4. Emphasising learning-by-doing in curriculum design
5. Challenging learners' head, heart and hands



**Manchester
Metropolitan
University**

**ESD TSN: Sustainability Competencies,
Skills, Graduate Attributes**



Thank You For Your Attention

Any Questions?

If you have any questions, comments, or proposals
for collaboration please get in touch

Dr. Theresa Nicholson d.nicholson@mmu.ac.uk



CoDesignS ESD Articles and Websites

Ahmad N., Toro-Troconis M., Ibahrine M., Armour R., Tait V., Reedy K., Malevicius R., Dale V., Tasler N. and Inzolia Y. (2023). CoDesignS Education for Sustainable Development: A framework for embedding Education for Sustainable Development in curriculum design. *Sustainability* 15(23), 16460.

ALDES (Association of Learning Design and ESD): <https://aldesd.org>

CoDesignS ESD Toolkit <https://codesignsesd.org/toolkit/>

Nicholson, D.T., Vargas, V.R., Price, E.A.C., Himatlal, K., Campen, L., Hartley, M. and Hewitt, T. (2023). **Transformative learning design for ESD in a skills-based module**. *Open Scholarship of Teaching and Learning*. Special Issue (CoDesignS ESD Toolkit), 3(1). *COMING SOON...*

Nicholson, D.T., Vargas, V.R., Skelly, G. (2023). Enquiry-based skills education for sustainable development in a UK Geography module as a catalyst for organisational change. *International Journal of Sustainability in Higher Education* 24(8), 1898-1915.

Price, E., Nicholson, T., Dunk, R., Lawler, C., Carney, M., Vargas, V., Veitch, S., Leigh, S.A., Singleton, M., and Mottram, S. (2024). **Enabling change agents for sustainable development: a whole-institution approach to embedding the UN Sustainable Development Goals in Higher Education**. *International Journal of Sustainability in Higher Education*. Accepted for Special Issue.

Price, E., Reeves, A., Gwilliam, J., Peter Harrison, , Schantz, N., Ribchester, C., Hughes, T. (2023) Education for Sustainable Development and Academic Quality Principles and Processes for Higher Education Providers. Quality Assurance Agency.

Tasler, N. and Dale, V. (2021) Learners, teachers and places: A conceptual framework for creative pedagogies. *Journal of Perspectives in Applied Academic Practice* 9(1), 2-7.

Toro-Troconis, M., Inzolia, Y. and Ahmad, N. (2023). Exploring attitudes towards embedding Education for Sustainable Development in curriculum design. *International Journal of Higher Education*, 12(4), 42-54.

