

Education for Sustainable Development TSN

Developing Sustainability Competencies, Skills, and
Graduate Attributes

2nd May 2024

Convenor: Scott Strachan, University of Strathclyde

The EAUC

- EAUC = Environmental Association for Universities and Colleges - Sustainability!
 - Mailing lists, Topic Support Networks, Training, Resources, Advice, Conferences
 - Operations, Teaching, and Research
- Learning & Teaching support:
 - **Jiscmail lists**, events, resources, community.



Agenda

13.00: Welcome and introductions

13.15: Case studies and stories + Q&A

14.05: Break

14.10: Breakout rooms: Networking and discussions

14.40: Conclusions and close

Welcome and Introductions

Hi!

In the chat, please introduce yourself...

What's your name?

Which institution or organisation are you from?

What's your role?

Poll: How well do you know the 8 UN ESD competencies?

Poll: Do you use or build on the ESD competencies in your institution?

The ESD competencies

Developing Sustainability Competencies, Skills,
and Graduate Attributes

Graduate Attributes

- **How different Universities define Graduate Attributes**
 - **Stirling** - Graduate attributes are the high level qualities, skills and understandings that a student should gain as a result of the learning and experiences they engage with, while at university
 - **Strathclyde** - Qualities, skills, dispositions, and understanding that students are expected to develop.

Key terms	Strathclyde	Stirling	Edinburgh	St Andrews	Glasgow
(Transferrable or just) Skills	Y	Y	Y	Y	Y
Understanding	Y	Y			
Experiences		Y	Y		Y
Activities				Y	
Abilities			Y		Y
Capabilities				Y	
Knowledge			Y	Y	
Qualities	Y	Y			Y
Attitudes			Y		
Dispositions	Y				
Develop(ment)	Y		Y	Y	Y
Gain		Y			
Reflection			Y		
Approaches to world			Y		
Approaches to learning			Y		
Not simply taught			Y		
Extra-curricular				Y	

Skills

- “A skill **is a type of activity or work which requires special training or knowledge**” – *Collins Dictionary*
- “A **skill** is the learned ability to act with determined results with good execution often within a given amount of time, energy, or both.” - *Wikipedia*
- “Skills can often be divided into domain-general and domain/discipline-specific skills. For example, in the domain of work, some **general (soft) skills** would include time management, teamwork and leadership, self-motivation and others, whereas **domain/discipline-specific (hard) skills** would be used only for a certain job”
- ... *Technical, hard, soft, people, life skills*
- To this end, we might say skills (particularly domain/discipline-specific and maybe even some soft skills) **can be taught and learned?**

Competencies

- A competency is an “interplay of knowledge, capacities and skills, motives and affective dispositions” *[UNESCO, 2017]*
- Sustainability competencies are “complexes of knowledge, skills, and attitudes that enable successful task performance and problem solving with respect to real-world sustainability problems, challenges, and opportunities” – *[Wiek, et al, 2011]*

Sustainability Competencies

Proceedings of the 15th International CDIO Conference, Aarhus University, Aarhus, Denmark, June 25 – 27, 2019.

schematic illustration of the UNESCO key competencies framework.

Competency	Ability to...
 1. Systems thinking competency	<ul style="list-style-type: none"> – recognize and understand relationships; – analyse complex systems; – think of how systems are embedded within different domains and different scales; – deal with uncertainty.
 2. Anticipatory competency	<ul style="list-style-type: none"> – understand and evaluate multiple futures – possible, probable and desirable; – create one's own visions for the future; – apply the precautionary principle; – assess the consequences of actions; – deal with risks and changes.
 3. Normative competency	<ul style="list-style-type: none"> – understand and reflect on the norms and values that underlie one's actions; – negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions.
 4. Strategic competency	<ul style="list-style-type: none"> – collectively develop and implement innovative actions that further sustainability at the local level and further afield.
 5. Collaboration competency	<ul style="list-style-type: none"> – learn from others; – understand and respect the needs, perspectives and actions of others (empathy); – understand, relate to and be sensitive to others (empathic leadership); – deal with conflicts in a group; – facilitate collaborative and participatory problem solving.
 6. Critical thinking competency	<ul style="list-style-type: none"> – question norms, practices and opinions; – reflect on own one's values, perceptions and actions; – take a position in the sustainability discourse.
 7. Self-awareness competency	<ul style="list-style-type: none"> – reflect on one's own role in the local community and (global) society; – continually evaluate and further motivate one's actions; – deal with one's feelings and desires.
 8. Integrated problem-solving competency	<ul style="list-style-type: none"> – apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solution options that promote sustainable development, integrating the abovementioned competences.

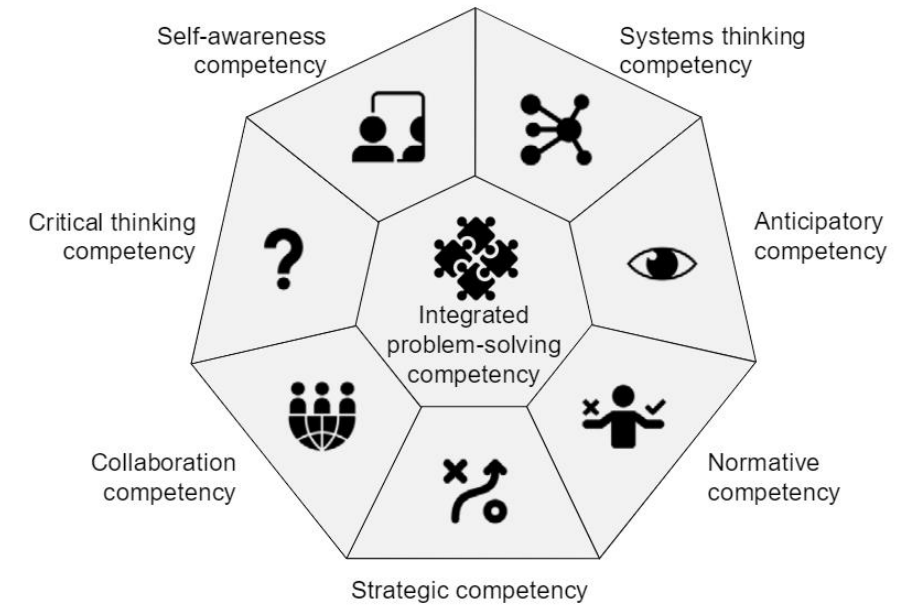
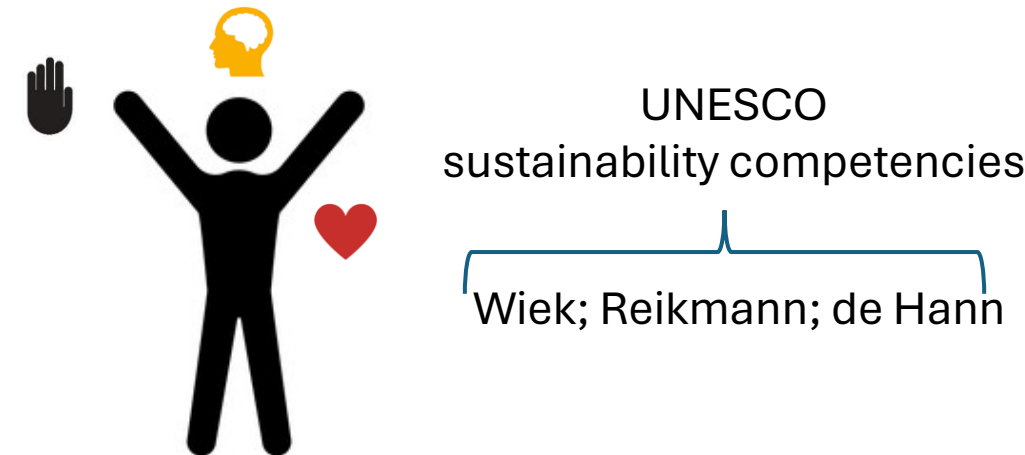


Figure 2. Our schematic illustration of the UNESCO key competencies framework.



Competencies and Education

- “The consideration and implementation of competencies in educational systems [involves] the **shift from input-oriented knowledge-based educations to outcome-oriented competence-based educations.**”
- “Such a shift builds on the idea that education should not only aim to provide knowledge in itself, but also **foster the development of competencies as an interplay between knowledge, skills, and attitudes among the learners**”
- “**Key competencies for sustainability** are competencies that, within the ESD domain, are considered necessary for all learners to cope with the increasingly diverse and interconnected world and to enable them to contribute to the urgently needed transformations towards a sustainable society.”

[Rosen et al, 2019]

- “[Transdisciplinary] **Competencies cannot be taught, but have to be developed** by the learners themselves”

[UNESCO, 2017]

Competencies and Employability



EUROPEAN
Higher Education Area

<https://ehea.info/page-employability>

- “Employability in fact designates **the ability of finding, fulfilling and keeping work**”
- “Employability is often perceived as the chance to become employed for a job in today's economy.
Caution: This view is far too limited!”
- “**It is not enough** to graduate with the knowledge and skills needed for a start in the individual professional life”
- “**Knowledge, skills and competences** have to be **continually developed** in order to keep pace with the **constantly changing outside world.**”
- “The graduate should dispose as well of the ability **to reflect on experiences, perspectives and to link those with the constant enhancement of her/his individual competences** in order to progress and successfully cope with change throughout (working) life”
- "Employability" is used for **the ability to purposefully use all the different competences** in order to fulfil given professional tasks and/or **to reach own professional targets** and **to adapt these competences to new environments and requirements**

References

Rosen, A. (2019). Mapping the CDIO Syllabus to the UNESCO Key Competencies for Sustainability

UNESCO (2017). *Education for Sustainable Development Goals – Learning Objectives*, ISBN 978-923-100209-0.

Rieckmann, M. (2012). *Future-Oriented Higher Education: Which Key Competencies Should be Fostered Through University Teaching and Learning?* Futures, Vol. 44, No. 2, pp. 127–135.

de Haan, G. (2010). *The Development of ESD and Related Competencies in Supportive Institutional Frameworks*. International Review of Education 56 (2&3), pp 315–28.

Wiek, A., Withycombe, L., Redman, C.L., (2011). *Key Competencies in Sustainability: a Reference Framework for Academic Program Development*. Sustainability Science, Vol. 6, No. 2, pp. 203–218.

Adopting the CoDesignS ESD Framework for Integrating Sustainability Competencies

Tools and Lessons from a Bootcamp Experience

Dr D. Theresa Nicholson, Manchester Metropolitan University

Beyond the UN competencies for a more nuanced human nature relationship

Dr Rehema White, University of St Andrews

Developing a module using the Inner Development Goals

Valerie Jackman, College Development Network (CDN)

Q&A

Peer-to-peer conversations

Breakout rooms

Ice breaker: Introduce yourself and your role, and share briefly one project or example of good practice around ESD / LfS that excites you.

Then choose a question you want to discuss, or come up with your own:

1 How do you increase staff and student buy in /engagement with competency development (whichever framework/approach you choose) as part of the curriculum?

2 Should we assess "competencies"? What/how would you assess? Can assessment and development go hand in hand?

There are padlets available to share your thoughts in written form.

Conclusions & upcoming support

Please fill in our feedback survey:

Let us know:

- what was useful for you today,
- how we can improve,
- **what you would like to hear about next time!**

<https://app.onlinesurveys.jisc.ac.uk/s/glos/esd-tsn-feedback-may-24>



Upcoming support

- [EAUC Annual Conference](#) – 25th & 26th June, University of Winchester. 20th anniversary!
- EAUC Scotland Conference - 13th November, Edinburgh – John MccIntyre Conference Centre
- Research with Colleges on current state of and barriers to ESD/LfS - focus groups/interviews, survey and workshops!

Existing support

- **Sustainability Champions Learning pack:** One stop shop
- **Subject specific support:** Realigning Curricula for the Future, ETF subject list
- **Green Careers:** Guides for students and staff
- **Event resources** – for example past ESD TSNs
- **Mailing lists** – ESD FE & HE
- **Learning for Sustainability Scotland Bulletin**

