Sustainability in Teaching -course

Session 1

F102, Väre-building, Otaniemi

Aalto-yliopisto
Aalto-universitetet
Aalto University

17.3.2023
12-15
Sessions and assignments

1h online intro
Introduction to the course
Pre-assignment instructions

Session 1
Introduction to sustainability
Sustainability in field specific context

Session 2
Integration of sustainability in higher education
Competencies

Session 3
SDG framework
SDGs in teaching

Session 4
Teaching methods

Session 5
Teaching and assessment methods
Values in teaching

Session 6
Dealing with feelings and anxiety
Course feedback

Deadline of Reflective assignments always on Tuesday at 12.00 before the next session
Session outline

1. Your expectations
2. Getting to know each other
3. Sustainability - a short introduction

*Break 10-15 min*

4. Sustainability in your fields: First reflections
5. Sustainability education

*Break 5 min*

6. My starting point as a teacher - exercise
Your expectations

Learn how to bring sustainability in teaching in general

“How could we connect sustainability to teaching.”

“To master my knowledge of integrating sustainability in teaching.”

“To learn about different methods of integrating aspects of sustainability into courses.”

Develop own course further / transforming own teaching

“To test, reiterate and develop the course together with its learning objectives etc. “

“How sustainability can be implemented so that it is practiced/lived also in teaching; so that teaching itself becomes sustainable and does not merely support the accumulation of short-term knowledge.”

“How to go from a keyword to a mindset?”

Sustainability and sustainability education in Aalto

“How we are expected to bind our teaching with Aalto’s sustainability strategy. What should be the amount of sustainability subject matter outside the core knowledge of our own fields?

“To learn more, and to get to know what is the understanding of sustainability and sustainability teaching in Aalto at the moment.”

Sharing experiences and building a teaching community

“To have collegial support, ideas and networking regarding these issues”

“Learn best practices of teaching sustainability to students.”

“This is also an opportunity to hear from other fields what are the sustainability related topics they may cover.”

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Warm-up (5min)

Draft individually (in keywords / writing or drawing):

What does sustainability mean to you?
Mocktail party

General guidelines:

• Find 1-2 colleagues you don’t know in advance
• Discuss until bell rings (~5 min)
• Change groups. Discuss with a new group.

Topic of discussion:

• Tell your colleagues what you drafted about sustainability. Elaborate.
• Round of spontaneous comments!
Introduction to sustainability
Anthropocene – the Epoch of Man

(CRUTZEN 2002)

Indefinite growth on a finite planet?

Steffen et al., 2015a
Planetary Boundaries

- Earth system = life supporting processes
- Defining and quantifying a safe operating space for humanity
- Nine boundaries

PB origins: Rockström et al 2009, updated Steffen et al 2015b)
Safe and just operation space for humanity

The doughnut model

How is it going?

Raworth 2017

SYKE Policy Brief 2018, based on O’Neill et al 2018
Sustainability crisis

- Complex
- Interconnected + reinforcing
- Large scale – global
- Long-term and pervasive
- Involving uncertainty
- Including contradiction and trade-offs
- Including conflicts of values

“Era of chronic multicrises” (Hukkinen 2021)
Sustainable Development is...

“...development that meets the needs of the present while safeguarding Earth's life-support system, on which the welfare of current and future generations depends.” (Griggs et al 2013)

“Sustainable development is an oxymoron”. (Brown 2015)

Sustainable development is “constructively ambiguous”. (Robinson 2004)

Human centric
Value laden
Political
Contested
What is being sustained?

- World as a resource
- Interconnected
- Regenerative
- Anthropocentric
- Ecocentric
Comments?
Break
Designated groups

**Group 1:** Sofia, Dina, Astrid

**Group 2:** Henriikka, Petra, Nina

**Group 3:** Tom B., Tom R., Hakan, Lena

**Group 4:** Neha, Tiia, Weiwei, Gerhard

**Group 5:** Donya, Anahita, Mika, Dandan

**Group 6:** Karin, Christine, Susa
Small group discussion

General guidelines:

Table groups: (15 min)
- Designated groups
- Team chair: last one to celebrate birthday this year
- Decide who will briefly report back to the whole group

Topic of discussion:

Based on your advance readings and previous discussions:

- What new (or surprising) did you learn about sustainability?
- Which sustainability dimension(s) are most pronounced in your field? Elaborate.
Sustainability (in) education
Vocabulary and concepts

Terminology: (Higher) Education for sustainable development (H)ESD (EESD in engineering); Sustainability in higher education SHE; Sustainability education; Education for sustainability EfS; Sustainable education

Education on sustainability (what)
- Add-on / Bolt-on: Separate courses / modules / programmes
- Awareness on sustainability

Education for sustainability (what & how)
- Built-in / Integration: Brought to disciplinary courses, doing things better

Education as sustainability (what & how & why)
- Re-building / Transformative: Doing better things

Sterling, 2001; Kolmos et al., 2016
Education aiming to support students’ abilities to contribute to a change towards sustainability
Goal: Students who are able to contribute to a more sustainable world

- Sustainability related knowledge
- Sustainability related skills/competencies
- Knowledge about the connections between one’s own field and sustainability challenges and solutions
  - Skills to participate in solving sustainability challenges from the perspective of one’s own field
  - Motivation and courage to act
- Field(s) specific knowledge
- Field(s) specific skills
- Academic knowledge and skills
  - E.g. critical thinking, research skills, interpersonal skills
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**Field(s) specific knowledge**

**Field(s) specific skills**

- **Knowledge about the connections between one’s own field and sustainability challenges and solutions**
- **Skills to participate in solving sustainability challenges from the perspective of one’s own field**
- **Motivation and courage to act**
Types of knowledge for sustainability (Soini et al 2022)

System knowledge (What is?)
- Understanding socio-ecological systems, structures, developments and ways of working
- Descriptive, explanatory, sets frames for the context of the more specific problem
- Enables identification of leverage points for change, alternative pathways

Target knowledge (What should be?)
- Clarifies the desired target states, involves values, contradicting targets by different stakeholders
- Important for decision making

Transformative knowledge (How?)
- Solution oriented knowledge: examines status quo critically, contributes to change, renewing ways of thinking and acting
- Includes reflexivity, (meta)learning

Speculative knowledge (What if..?)
- Identifying and dealing with uncertainties, unanticipated effects
- Understanding counter forces of sustainability transformations
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Change towards sustainability

- Deliberate, unintended
- Incremental, disruptive

Spheres of sustainability transformation (O’Brien, 2018)

• **Practical** (technical, behaviours)
  • direct contribution to desired outcome, measurable

• **Political** (systems and structures)
  • facilitates or constrains practical

• **Personal** (beliefs, values, worldviews)
  • influence understanding of practical and political

→ Personal and political generate conditions for practical transformations

All spheres necessary and must be recognized!
Examples

Practical:
• New component increasing energy efficiency of industrial process
• Behavioral change: car -> bicycle

Political:
+ R&D funding for component development
- No bike lanes available or maintained

Personal:
- Belief that cycling is dangerous
+ Choosing study path for job in enhancing energy efficiency
## Small group discussion

### General guidelines:
1. Individually (5 min)
2. In groups of 2-3 (15 min)
   - Designated groups

### Topic of discussion:
Think of **your field** and the spheres of change
- What types of knowledge does your field contribute to?
- Which spheres of change does your field contribute to?

You get to continue these reflections in your home assignment.
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Transformative knowledge (How?)
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Speculative knowledge (What if..?)
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Break
Towards integrating sustainability

• Identifying your starting point as teacher
  - Your unique situation in terms of course topics, practical limitations, leeway to do changes

• Refining your goals for this course?
  - Finding meaningful sustainability connections
  - Integrating specific themes and content
  - Developing teaching methods
  - …
Looking for starting points for sustainability integration: I work on..

Programme

- New programme
  - Sustainability is in the core of the programme
- Existing programme
  - The relation to sustainability is not yet made visible

Course

New course
- Sustainability is in the scope of the course
- Intended learning outcomes are fixed
- Content to be modified

Existing course
- Sustainability is outside the scope of the course
- Intended learning outcomes are to be modified
- Content fixed

My refined goals: to work on e.g.:

Participation in programme development work

ILOs

Teaching methods

New content to course

Other
How did it go?
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**Pre-assignment**

- Reflective assignment
- Reading task

**Session 1**
- 17 March
- DL Tue 28 March
- Discussion with a colleague
- Reflective assignment
- Reading task & Video on SDGs

**Session 2**
- 31 March
- DL Tue 18 April
- Discussion with a student
- Reflective assignment
- Reading task

**Session 3**
- 21 April
- DL Tue 2 May
- Teaching methods exercise and reflective assignment
- Reading task

**Session 4**
- 5 May
- DL Tue 16 May
- Reflective assignment
- Reading task

**Session 5**
- 19 May
- DL Tue 30 May
- Final reflection

**Session 6**
- 2 June
- DL Fri 16 June
- Final reflection

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**Deadline of Reflective assignments** always on Tuesday at 12.00 before the next session
Before next session...

- Home assignment: Instructions and assisting questions in MyCourses (dl 28.3. noon)
- Reading task: Wiek et al. 2011 (pdf in MyCourses).

Next session Fri 31.3.2023 (in Zoom)!

Save the date: 5.5. afterwork with sustainability board games – poll coming in the next session.
Questions, comments

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Literature


