Tools and Innovative Teaching Formats in Sustainability Education

Marina Schmitz
CBS International Business School
m.schmitz@cbs.de
LinkedIn: https://de.linkedin.com/in/marina-schmitz-bb89a177
AIB T&E SHARED INTEREST GROUP
GET IN TOUCH 😊

If you are interested, please get in touch:
https://tesig.aib.world/contact-us/

Source: https://tesig.aib.world/

AIB Teaching and Education Shared Interest Group (T&E SIG) promotes excellence in teaching and knowledge sharing among IB educators around the globe.

T&E SIG’s objectives are: facilitating development and sharing of best teaching practices; providing a forum for teaching-related networking; supporting exchange of ideas about IB education; creating mentoring opportunities for IB teachers; and promoting research on teaching and education among AIB members.

https://tesig.aib.world/newsletters/
If you are interested, please get in touch: https://sustainabilitysig.aib.world/contact-us/

Source: https://sustainabilitysig.aib.world/
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TOOLBOX OVERVIEW – THREE AREAS

Awareness & Knowledge building
(Tool 1-3)

Contemplation
(Tool 4-5)

Action
(Tool 6-8)
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TEACHING FORMATS OVERVIEW – TWO PROJECTS

It's time to inspire

ISSUE

EFFORT

February 2021  TOOLS AND INNOVATIVE TEACHING FORMATS IN SUSTAINABILITY EDUCATION | © Marina Schmitz
TOOLBOX 1-3
AWARENESS & KNOWLEDGE BUILDING
TOOL 1 – FOOTPRINT CALCULATORS

REFLECTING ON PERSONAL CONSUMPTION

TOOL 2 – KNOWLEDGE TESTS
SULITEST AND CLIMATE FOOTNOTES TEST

For a sustainable future, we need a world full of people with sustainability awareness and core literacy.

- 1. Without humans there would be no greenhouse effect.
- 2. The ozone hole is the main cause of the greenhouse effect.
- 3. CO₂ is more harmful to the climate than the same amount of methane.
- 4. Water vapor is a greenhouse gas.
- 5. The global rise in temperature in the last century was the biggest within the last 1,000 years.
- 6. The 1990s were the warmest decade of the 20th century.
- 7. In the last century, warming in Austria was significantly lower than the global average.
- 8. If the current greenhouse gas content in the atmosphere was stabilized, the climate would nevertheless continue to warm up for at least 100 years.
- 9. A diesel vehicle generates more CO₂ emissions per person and kilometer than a comparable petrol vehicle.
- 10. The production of 1 kg of pork produces more greenhouse gas emissions than the same amount of wheat.

TOOL 3 – GAPMINDER QUIZ
HOW MUCH DO YOU KNOW ABOUT THE SDGs?

Source: https://upgrader.gapminder.org/t/sdg-world-un-goals/
TOOLBOX 4-5
CONTEMPLATION
TOOL 4 – CLIMATE PROTECTION DELAY
UNDERSTANDING DIFFERENT NARRATIVES

Which argumentation patterns are used to hinder (or stop) climate protection

Hardly anyone denies anthropogenic climate change any longer. The argument against effective climate protection mostly takes a different twist today. The MCC research institute has headed an analysis of the debate. This study identifies four core statements typically leading to delay in climate protection, each with subtypes. A tricky aspect: these patterns of argumentation are used by fundamental climate protection opponents as well as by people who point out quite relevant aspects. This analysis sharpens our understanding, which helps to react adequately to key arguments, and, above all, to keep debates constructive.

TOOL 5
BE A CARBON CONSULTANT! (GROUP WORK)

Serve as each other’s carbon consultants. Make a personalized plan for each person (using the provided template)

1) Choose a goal
2) Identify specific, concrete actions
3) Stress-test the plan: Anticipate obstacles & generate solutions

TOOL 5
BE A CARBON CONSULTANT! (GROUP WORK)

Instructions: For each team member, pick at least one carbon-reduction goal and identify realistic, specific, concrete actions you can take within the next year to achieve your goal. Be sure to describe how and when you would implement each action. Then stress-test the plan: identify potential obstacles, and then generate solutions for overcoming the obstacles.

Pro tips:
- Complete this process for one group member then move to the next person
- Be as specific as possible: Try “If... then“ statements (e.g. “If I am at a buffet, then I will fill my first plate with vegetarian options.“ “If it’s not raining, I will bike to university/work“)
- Support each other! 😊

<table>
<thead>
<tr>
<th>GROUP MEMBER</th>
<th>GOAL</th>
<th>Specific actions</th>
<th>Anticipated obstacles</th>
<th>Potential solutions</th>
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TOOL 6
BUILD YOUR OWN CLIMATE SCENARIOS TO STAY BELOW 2 DEGREES

https://en-roads.climateinteractive.org/scenario.html?v=2.7.29
TOOL 7
DO YOU KNOW OUR MOST EFFECTIVE CLIMATE CHANGE SOLUTIONS?

PROJECT DRAWDOWN

COMBINING TOOLS IN TASKS

SAMPLE TASKS

1. Please analyse the current status quo!
   • Which countries are the world’s top 10 carbon emitters?
     http://www.globalcarbonatlas.org/en/CO2-emissions
   • Please browse the info page of https://ourworldindata.org/co2-emissions. What are your lessons learned when you compare different aspects of CO2 emission?
   • What do you as an individual contribute to the current situation (i.e. what is your own carbon footprint)? Please describe the results of your own calculation:
     https://footprint.wwf.org.uk/ What can you change?

2. What can be possible solutions to overcome the climate crisis?
   • Have a look at the EN-ROADS Simulator! Please describe your scenario.
     https://en-roads.climateinteractive.org/scenario.html?v=2.7.29
   • Have a look at the industry-specific solutions of project “Drawdown”. Which solutions have the highest impact?
     https://www.drawdown.org/solutions/table-of-solutions
TOOL 8 – UN GLOBAL COMPACT & SDGS
17 SUSTAINABLE DEVELOPMENT GOALS


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TOOL 8
SDG COMPASS TOOL IN PRACTICE

- **SDG Compass**
  - [https://www.unglobalcompact.org/library/3101](https://www.unglobalcompact.org/library/3101)
  - [https://sdgcompass.org/](https://sdgcompass.org/)

- **Now available: SDG Manager**
  - [https://www.unglobalcompact.org/take-action/sdg-action-manager](https://www.unglobalcompact.org/take-action/sdg-action-manager)

Most of the 17 SDGs are difficult for companies to apply – the SDG Compass offers KPIs which help to track and measure progress!
The SDG Compass provides guidance for companies on how they can align their strategies as well as measure and manage their contribution to the realization of the SDGs.
TOOL 8
STEP 2 - DEFINING PRIORITIES

1. Map the value chain to identify the main impact areas
2. Identify the negative and positive impacts
3. Define priorities

Source: This tool has been developed with the help of our Climate-KIC Pioneers into Practice, Jacquelyn Makumator-Jones and Carolina Mendonça
Learn more about the program: https://pioneers.climate-kic.org/
#1

MAP THE VALUE CHAIN
The Value Chain is a model that helps analyze the specific activities of an organization to create value and a competitive advantage. It is a set of activities that an organization develops to add value to their clients. The way that these activities are developed will determine costs and revenue.
#2
IDENTIFY THE POSITIVE AND NEGATIVE IMPACTS
TOOL 8

STEP 2.2 – EXAMPLE: MINING INDUSTRY
TOOL 8
STEP 2.2 & 2.3 – MC DONALD’S IMPACT

IDENTIFYING THE POSITIVE AND NEGATIVE IMPACTS

Step 2.2:
Identify the positive and negative impact!

Step 2.3:
How can this help to define priorities?
TOOL 8
STEP 3 – SETTING GOALS

SMART GOALS
Specific, Measurable, Achievable, Realistic, Timely
## TOOL 8
### STEP 3 – SETTING GOALS

<table>
<thead>
<tr>
<th>Nº</th>
<th>GOAL</th>
<th>TIME</th>
<th>METRIC</th>
<th>SDG</th>
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Integrating sustainability has the potential to transform all aspects of your company’s core business, including its product and service offering, customer segments, supply chain management, choice and use of raw materials, transport and distribution networks and product end-of-life.

It’s important to report and communicate on your progress against the SDGs continuously in order to understand and meet the needs of your stakeholders.

This tool can be transformed to an online board to engage with students outside of the classroom (e.g., Miro: [https://miro.com/](https://miro.com/))!
TEACHING FORMATS
ERASMUS+ KA2 Strategic Partnership

2018 - HU01 - KA202 - 047730

ISSUE – Innovative Solutions for SUstainability in Education

https://www.issue-project.eu/
https://www.issue-project.eu/stay-updated
21-day Challenge

Builds a habit of sustainable living

Easy and fun!

Learners are inspired by each other

Moodle-powered educational module

Easy to integrate in any course

Suitable for
✓ Students
✓ Teachers
✓ Uni staff
Watch the video on one of 17 SDGs

Choose the challenge

Accomplish it

Post your results in Moodle

Get points!

Repeat this cycle for 21 days to form a habit

Evaluate your sustainability awareness

Entry quiz in the beginning

Get the highest number of points and win!

Unique materials from all over Europe

Evaluate how much you have learned

Ace the final quiz and get a certificate
Sustainable development escape room

Easy to integrate as part of any course

Suitable for
✓ Students
✓ Teachers
✓ Uni staff
✓ Companies

Online version to be developed

Gamified learning experience

Great teambuilding experience!
Goals
- Enhancing players' knowledge of sustainable development
- Raising awareness, sensitizing people
- Ideas, tips, practical examples to change attitudes, change consumer habits and decisions
- Emphasising that there is no Plan B/Planet B, the Earth has to be saved through responsible behaviour and we must act soon!

Target group
- primary: students, university professors / employees
- secondary: people interested (corporate world, local communities)

Features of the game
- 4-5 players
- duration: 1-1.5 hours
- linear game through SDGs
improve the effectiveness and quality of sustainability-related teaching

builds competencies related to sustainability and responsible management

https://effort.lehre.hwr-berlin.de/
https://effort.lehre.hwr-berlin.de/join-the-network

New innovative teaching formats
Handbook of innovative teaching methods

Suitable for
✓ Students
✓ Teachers
✓ uni staff

LUT University
18 57
BGE
CBS
Hochschule für Wirtschaft und Recht Berlin
Berlin School of Economics and Law
Universität degli Studi di Bari
Aldo Moro
Università del Piemonte Occidentale
Future scenario workshop
Builds on the “future workshop” methodology with its 4 phases

Encourages critical thinking
Fosters creativity
Suitable for
✓ Students
✓ Teachers

<table>
<thead>
<tr>
<th>WORKSHOP PHASES</th>
<th>SEMESTER OUTLINE</th>
<th>SESSION FOCUS</th>
<th>HOMEWORK TO NEXT SESSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PREPARATION PHASE</td>
<td>✅ Course Introduction, Overview of Getting to know the group</td>
<td>✅ Do <a href="https://www.jospehstenari.com/texts/reading/individual/actical/">https://www.jospehstenari.com/texts/reading/individual/actical/</a></td>
<td></td>
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<tr>
<td>WEEK 01</td>
<td>✅ Group Formation, Team Work &amp; Clarifying of Topics</td>
<td>✅ Next with your team for a fun activity together to get to know each other better (group)</td>
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<tr>
<td>CRITIQUE PHASE</td>
<td>✅ Global Challenges (Climate Change, etc.) in the Hyper-Connected World</td>
<td>✅ Research challenges and critical issues specific to your home sector, also considering interconnections with other stakeholders and sectors (group)</td>
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<tr>
<td>WEEK 03</td>
<td>✅ Guided Group Work: Collecting critical issues &amp; Brainstorming</td>
<td>✅ Conduct an expert interview with a business professional and then from the sector you are working on and use this to narrow down your choice of critical issue you want to focus on with your group (group)</td>
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<tr>
<td>FANTASY PHASE</td>
<td>✅ Introduction: Setting the mood: “Future is in Getting Positive Framing &amp; Brainstorming”</td>
<td>✅ Develop a more concrete draft of the vision/ scenarios you started to create in the session (group)</td>
<td>✅ Adopt your unebbb scenario draft if you feel the need to alter the framework. (refine what you did)</td>
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<tr>
<td>WEEK 05</td>
<td>✅ Imagining Futures: Futures Game 2050</td>
<td>✅ Adopt your unebbb scenario draft if you feel the need to alter the framework. (refine what you did)</td>
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<td>WEEK 06</td>
<td>✅ Envision: Express and explore your unebbbthrough creative means (depending on local options e.g. skilled painting, improv theater, poetry...)</td>
<td>✅ Adopt your unebbb scenario draft if you feel the need to alter the framework. (refine what you did)</td>
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<tr>
<td>WEEK 07</td>
<td>✅ Unpack presentation, evaluation of ideas</td>
<td>✅ Research Future Trends &amp; Risk Reports; Reading Assignments on Forecasting &amp; Scenario Development or Analysis (contribute a whole group)</td>
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<tr>
<td>WEEK 08</td>
<td>✅ Translating Unpack: Future Research, Forecasts &amp; Scenario Development</td>
<td>✅ We’re up your “translated” future scenario based on the translation, proposing and research (reading you did since week 08)</td>
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</tr>
<tr>
<td>IMPLEMENTATION PHASE</td>
<td>✅ Prioritizing your scenario/ solution with Lego Serious Play (LSP)</td>
<td>✅ Based on the backcasting methodology and tools, continue outlining a strategic plan that can be implemented in the near to medium future in order to facilitate your future courses and vision.</td>
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<td>WEEK 09</td>
<td>✅ How to make it happen: Backcasting Methodology &amp; Tools</td>
<td>✅ Work on finalizing your assignments and presentation</td>
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<td>WEEK 10</td>
<td>✅ Follo-up: Final Presentations &amp; Marking in Progress and Reflection Journal (coursework)</td>
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</tbody>
</table>

Partly based on (Bolton, 2014a; Kaban & Miller, 2016a)
The aim of the EFFORT project is to develop tools and guidelines that support higher education institutions to increase the effectiveness and quality of sustainability-, ethics- and/or CSR-related teaching.

One of the expected results from this project is an Innovative Teaching Methods Handbook. The handbook is a structured overview of innovative methods of teaching CSR- and sustainability-related courses, which is aiming to make responsibility teaching easier and more innovative.

Connect 2 Collaborate!

If you are using innovative methods in your teaching, there is a unique opportunity to contribute to the EFFORT handbook of innovative teaching methods. If you are interested, please send an email to Alena and Marina (contacts below)

Contacts:
alenachistiakova@lut.fi | m.schmitz@cbs.de
NEED FOR AN „EDUCATIONAL OVERHAUL“
(BODINET, 2016B, P. 11)

TEACHING AND LEARNING

Outdated, old paradigm
Linear thinking
Hierarchical
Passive Students

Innovative, looking forward
Systems Thinking
Teacher as Facilitator
Active Students

Approaches and methods for innovative teaching & learning

- Problem- and Project based learning
- Discussion, participation & student centered learning
- Collaboration & group work
- Gamification and experienced-based learning
- Inter- & transdisciplinarity

THE SDG TEACHING MAP @ CBS

KEY COMPETENCIES FOR SUSTAINABLE DEVELOPMENT IN (MANAGEMENT) EDUCATION

- Self-awareness
- Strategic
- Anticipatory
- Critical thinking
- Collaboration
- Normative
- Systems thinking
- Integrated problem-solving

RIECKMANN, 2018, P. 44f.
THANK YOU!

“Nothing you do will amount to more than a single drop in a limitless ocean!”

…but what is an ocean but a multitude of drops?” ; )