

Lecture Syllabus: Closing the Knowledge Gap

Lecture Description:

To promote active engagement in sustainability transitions, sustainability professionals must adapt their findings and interpretations to captivate key stakeholders from across industry, academia, and the global public. This lesson guides students through the practice of identifying knowledge gaps and reducing assumptions to develop targeted explanations and interpretations of sustainability assessments for an intended audience.

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Date: Jan 2025 3-week course

Location: DTU, KGS. Lyngby, DK

Format: Live/Online (materials available online)

| <u>Systems Thinking</u> | <u>Interpersonal Communication</u> | <u>Strategic Thinking</u> | <u>Normative Thinking</u> | <u>Anticipatory Thinking</u> |
|---|--|--|---|--|
| Learning Objectives | Learning Objectives | Learning Objectives | Learning Objectives | Learning Objectives |
| Students can <i>identify</i> stakeholders across the value chain. | Students can <i>recognize</i> knowledge gaps between different stakeholders. | Students can <i>highlight</i> the roles of each stakeholder in executing their recommendations. | Students can <i>recognize</i> the relationship between their recommendations and existing sustainability infrastructure. | Students can <i>explain</i> their recommendations in the context of a sustainable future. |
| Students can <i>place</i> stakeholders in a linear order considering knowledge gaps and needed context. | Students can be able to <i>match</i> needed context and definitions to different knowledge levels. | Students can <i>position</i> knowledge, context, and recommendations in relation to short-term and long-term outcomes. | Students can succinctly <i>relate</i> their recommendations within the existing sustainability infrastructure for their stakeholders. | Students can <i>integrate</i> their vision for the future with opportunities and barriers which can impact their recommendations and findings. |
| Students can <i>practice</i> developing a map of stakeholders and placing context at home and then can work in small groups to improve and enhance their illustrations. | Students can <i>test</i> explanations for different stakeholders through group pitches and peer feedback. | Students can <i>draft</i> transition timelines or suggest implementation strategies for their recommendations. | Students can <i>validate</i> their recommendations using existing sustainability policies and initiatives. | Students can <i>rehearse</i> , sharing their vision for the future through group pitches and peer critiques. |
| Students can <i>utilize</i> their illustrations by developing and evaluating their final two (2) summaries and interpretation. | Students can <i>apply</i> their enhanced explanations by writing an executive summary, a general summary, and a detailed interpretation. | Students can <i>adapt</i> their recommendations to reflect the implementation capabilities of each audience. | Students can <i>recommend</i> improvements to sustainability infrastructure based on their work. | Students can incorporate their vision in their interpretation of their experiments and findings. |

Required Reading:

1. Gibson, R.B. 2006. Sustainability assessment: basic components of a practical approach. *Impact Assessment and Project Appraisal* 24(3): 170–182.
2. Hauschild, M.Z., Bonou, A., Olsen, SI 2018, Life Cycle Interpretation. in *Life Cycle Assessment: Theory and practice*. Springer, pp. 323-334.
3. Laurent, A., B.P. Weidema, J. Bare, X. Liao, D. Maia de Souza, M. Pizzol, S. Sala, H. Schreiber, N. Thonemann, and F. Verones. 2020. Methodological review and detailed guidance for the life cycle interpretation phase. *Journal of Industrial Ecology*: jiec.13012.
4. Wiek, A., L. Withycombe, and C.L. Redman. 2011. Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science* 6(2): 203–218.

Further Readings:

1. *The Art of Explanation: Making Your Ideas, Products, and Services Easier to Understand* by Lee Lefever
2. *Infographics: the Power of Visual Story Telling* by Jason Lankow
3. *Resonate: Present Visual Stories that Transform Audiences* by Nancy Duarte
4. <https://pre-sustainability.com/articles/life-cycle-assessment-lca-basics/>
5. ISO 14040 (2006) Environmental management: Life cycle assessment. Principles and framework. International Organization for Standardization, Geneva
6. ISO 14044 (2006) Environmental management: Life cycle assessment. Requirements and guidelines. International Organization for Standardization, Geneva
7. EC JRC (2010) International Reference Life Cycle Data System (ILCD) Handbook: General Guide for Life Cycle Assessment. Detailed guidance. EUR 24708 EN, European Commission, Joint Research Centre, Luxembourg

Lecture/Assignment Schedule:

Day 1: Part 1

Lecture: 45 Min

Closing the Knowledge Gap

Groupwork: 60 min

Create your knowledge outline for your LCA. We will return to the plenum throughout the workshop to present and share your outline as well as ask questions.

Day 1: Part 2

Lecture: 45 Min

Interpretation- Structure and Methods

Individual/Pair work: 60 Min

Outline the first draft of your interpretation for one of your audience members. Be sure to indicate where you will need to use figures or analysis to support your interpretation. Update your knowledge outline as you go through this first draft of your interpretation.

Turn in your finished knowledge gap outline at the start of class on Day 2.

Day 2

Lecture: 45 Min

Data Visualization for Interpretation

Groupwork: 60 min

Present your interpretation outline to your group for feedback and comments. Brainstorm and begin to sketch your figures for interpretation with your group.

Individual/Pair work: homework

Create your first draft of your interpretation, including rough drafts of your figures and submit for feedback.

Due the Following Friday:

Turn in your developed drafts of your interpretation. You will receive notes and comments using a combination of the interpretation grading rubric and the knowledge gap outline you turned in on day 2. You will have the opportunity to incorporate these notes into your final report.