

Assessment group presentation 2: instructions

This is a group presentation, in which we assess your understanding of how to search academic literature, and critically interpret what you read. The concrete product, construction application and location for each group:

- **Group #1** – Concrete blocks in a house (Accra, Ghana)
- **Group #2** – Precast concrete in a tunnel lining (Istanbul, Turkey)
- **Group #3** – UHPFRC concrete in a bridge deck (Montreux, Switzerland)
- **Group #4** – In-situ reinforced concrete in a multi-story building (Bangkok, Thailand)

Objectives

- **Present** 1 example of a **good** research article related to the concrete product of your group, that:
 - i) investigates a sustainability strategy at the cement / concrete / structural scale
 - ii) AND includes an assessment of embodied carbon.**Describe** the features that make it a good article.
- **Present** 1 example of a **bad** research article related to the concrete product of your group, that:
 - i) investigates a sustainability strategy at the cement / concrete / structural scale
 - ii) AND includes an assessment of embodied carbon.**Describe** the features that make it a bad article.
- **Ask** ChatGPT (or another large language model AI tool) to evaluate if the 2 articles you have already evaluated yourselves are good or bad; then evaluate the ChatGPT summary.
 - i) What do you think it has got right in its assessment?
 - ii) What do you think it has got wrong, or has overlooked?
 - iii) Do you think this AI tool has been useful for you to understand if the article was good or bad? Would you use it for the future?

Competencies to be assessed

- Effectively search the literature for a given topic
- Apply principles of life cycle analysis to assess claims about reductions in embodied carbon
- Critically summarise the main findings of a research article
- Assess the quality of a research article by relevant criteria (inc. statement of research questions and hypotheses, methodological rigour, detail of explanations, treatment of uncertainties, comparison with previous literature)
- Critically assess the outputs of AI tools when used to evaluate research articles

Presentation outline

The general **outline/format** for your presentation should be:

1. Explanation of your search strategy

- a. What were the key decisions you used to form your search strategy?
- b. Which search terms did you use in your initial search?
- c. How did you combine search terms (i.e. use Boolean operators) in your initial search?
- d. From the articles you found, how did you choose the articles you are presenting today?

2. Evaluation of a 'good' research article

- a. For the 'good' research article:
 - i. Briefly summarise: the aims of the study, the type of cementitious system investigated, the main characterization techniques used, the main conclusions.

- ii. Explain how the authors' assessed the effect of the chosen sustainability strategy on embodied carbon.
- iii. Evaluate the quality of the research article in terms of: clarity of aims, validity of the embodied carbon assessment; (and any other criteria you think are relevant to each study).

3. Evaluation of a 'bad' research article

- a. For the 'bad' research article:
 - i. Briefly summarise: the aims of the study, the type of cementitious system investigated, the main characterization techniques used, the main conclusions.
 - ii. Explain how the authors' assessed the effect of the chosen sustainability strategy on embodied carbon (here you are encouraged to be critical about what authors have done).
 - iii. Evaluate the quality of the research article in terms of: clarity of aims, validity of the embodied carbon assessment; (and any other criteria you think are relevant to each study).

4. Evaluation of the ChatGPT summary

- a. Describe the question/prompt you gave to ChatGPT to critically evaluate your selected articles (like your literature search, the process should be repeatable)
- b. Evaluate the quality of the ChatGPT response: what is good, and what the limitations are.

Instructions

- **Time limit** = 15 minutes maximum
- The presentation time should be shared approximately equally between the group members. (This should not include the general introduction and thank you for listening slides)
- Do not include **research articles from LMC** in the examples you share.
- To choose the 'bad' research articles, you must choose from **peer-reviewed journals** (there are many non peer-reviewed journals where the quality is often very poor – but this would make the exercise too easy!)
- You can use review articles to help you find relevant research articles – but the examples you present must **all be research articles**.
- We expect some **basic 'good habits'** in your presentation – these are:
 - Include slide numbers
 - Ensure that any text on your slides is visible from the back of the lecture theatre (a general rule is minimum font size of 12)
 - Avoid having too much written content on slides
 - Ensure infographics are clearly labelled and are not unnecessarily animated or distracting
 - We encourage you to use figures and diagrams to help explain your points. These can be from articles in the literature, or you can make your own diagrams too.
 - Include appropriate references for any content included in the presentation that is not your own. This includes, figures, images and quotes.
 - Include the references for cited material on each slide in Harvard format
 - Only cite research articles, or textbooks (unless there is a special reason).
 - Do not cite the lecture slides – find your own sources of information to cite.
- We recommend you use the EPFL powerpoint template, however this is not mandatory.