



Norwegian University of  
Science and Technology

## The Collaborative Role of Generative Artificial Intelligence – Experience from Students

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# Presentation Overview

- Objective - to share experience
- Introduction to the Enterprise Architecture Modelling course
- Goal of the AI workshop with students
- Students' perceptions:
  - SWOT analysis
  - Collaborative role of AI
- Reflections

# Modelling – collaborative & participatory

- Enterprise Architecture Modelling is a collaborative and participatory process.
- ‘Domain experts’ are an essential part of the process.
- Knowledge elicitation is an important skill.
- Epistemic dimension: scientific knowledge  $\leftrightarrow$  real world

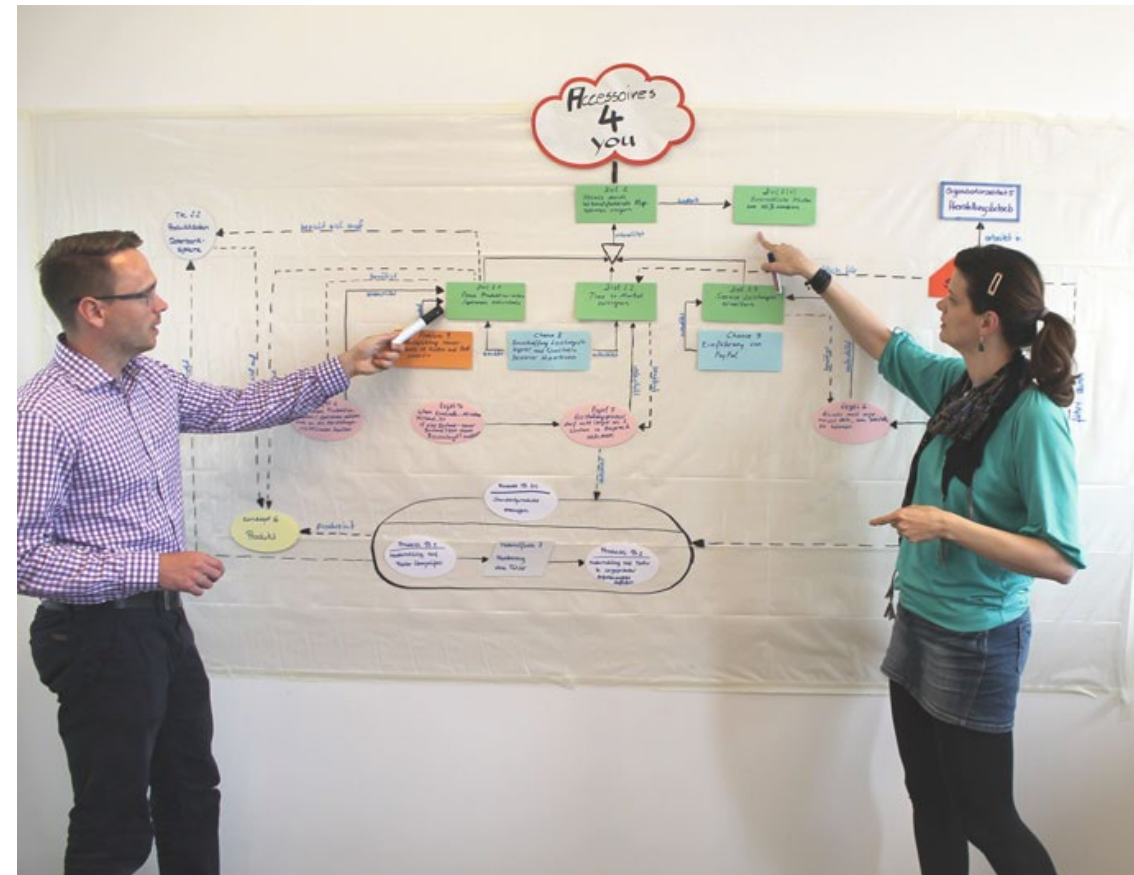
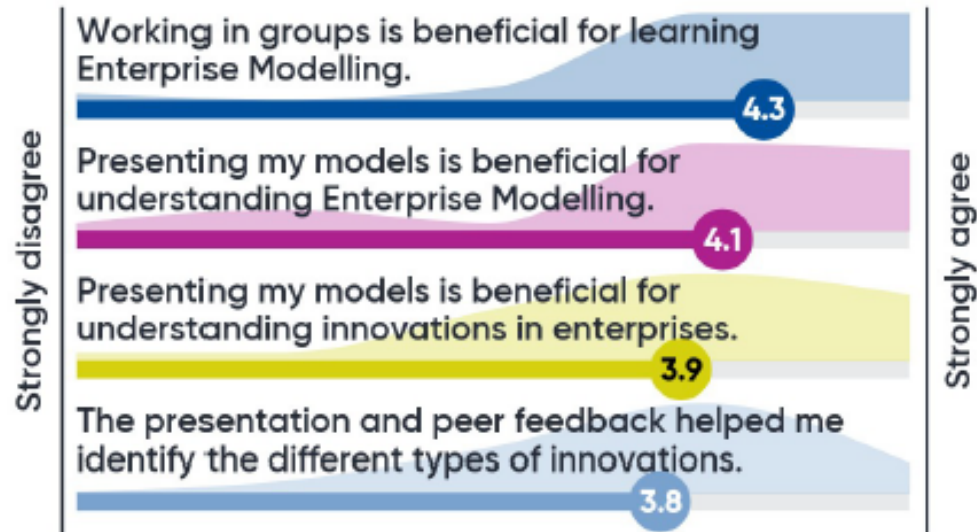
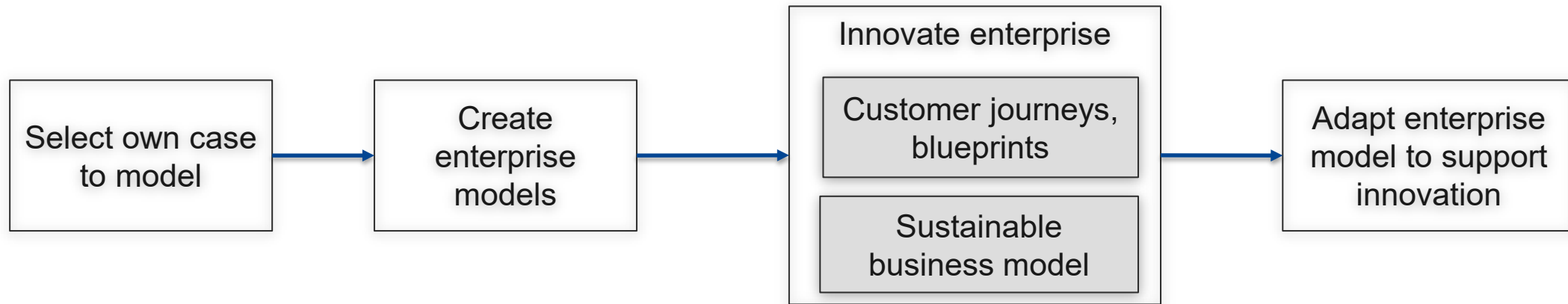


Image copied from Sandkuhl et al. 2014

# About the course



Feedback from students in 2023

Collaborative learning activities are conducted, e.g., peer presentations and feedback, peer reviews.

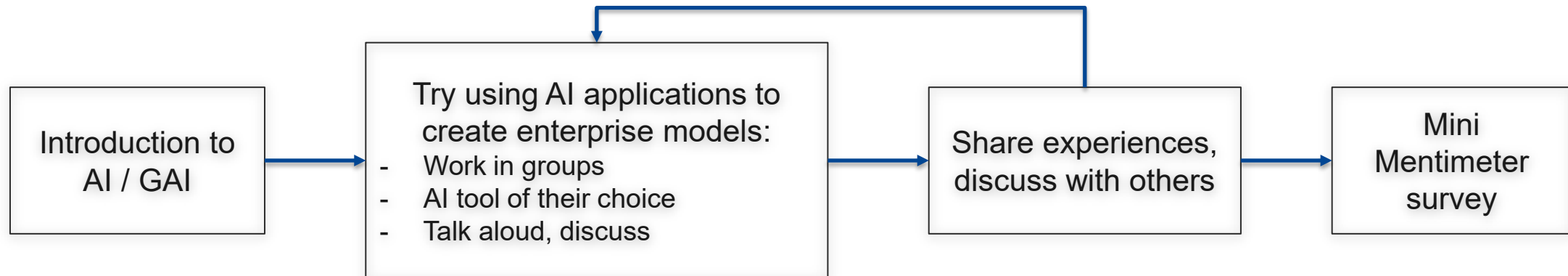
# Goals of the AI workshop

- Academic integrity and honesty
- Stimulate open dialogue
- Encourage experience sharing
- Raise awareness about GAI
- Explore the use of GAI applications
  - Current status, w.r.t. Enterprise Architecture Modelling
  - SWOT analysis
- Avoid pitfalls of using GAI
- Promote critical reflection



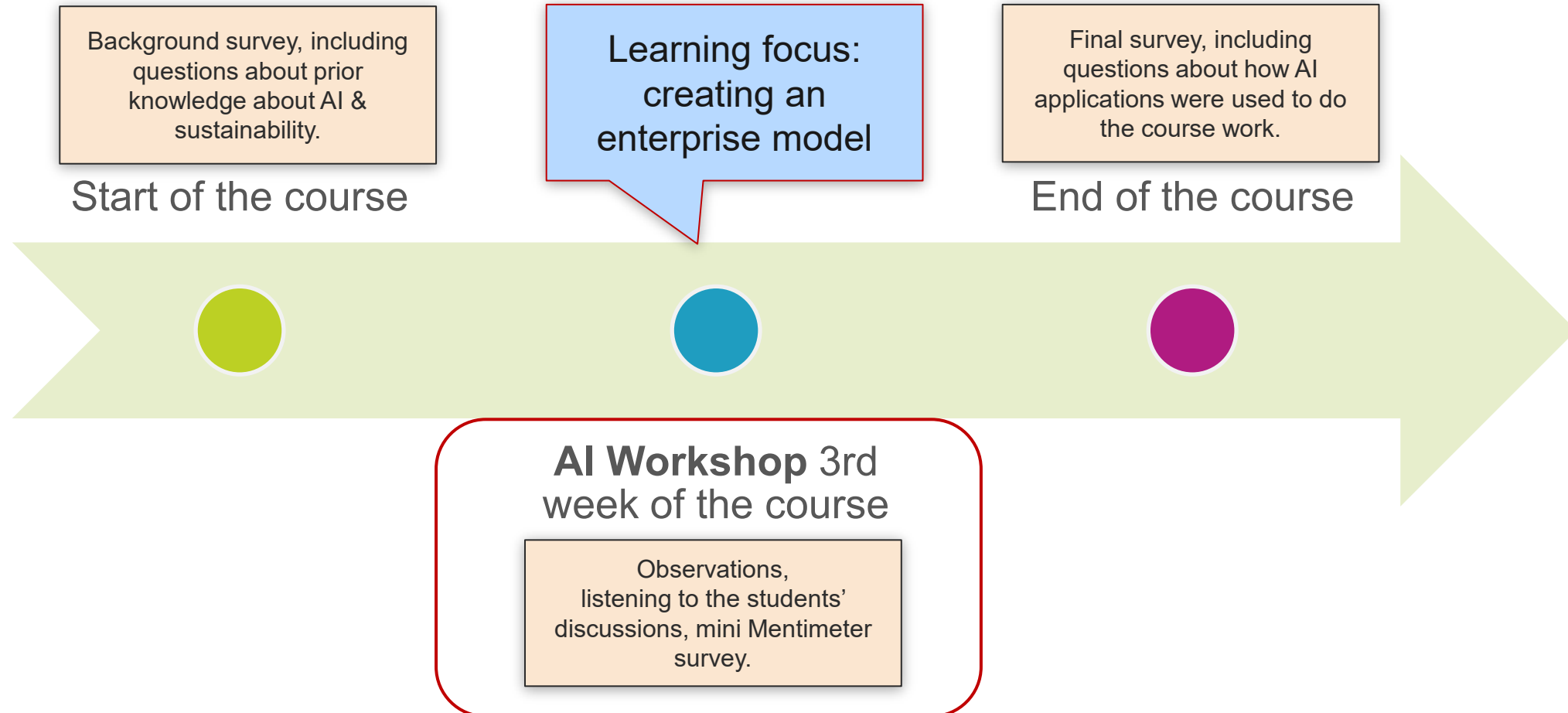
I could get an insight into how the students may use AI applications to do their assignments!

# Workshop method



Details of the workshop and the results will be presented at the PRO-VE 2025 conference, on the theme Hybrid Human-AI Collaborative Networks.

# Data collection

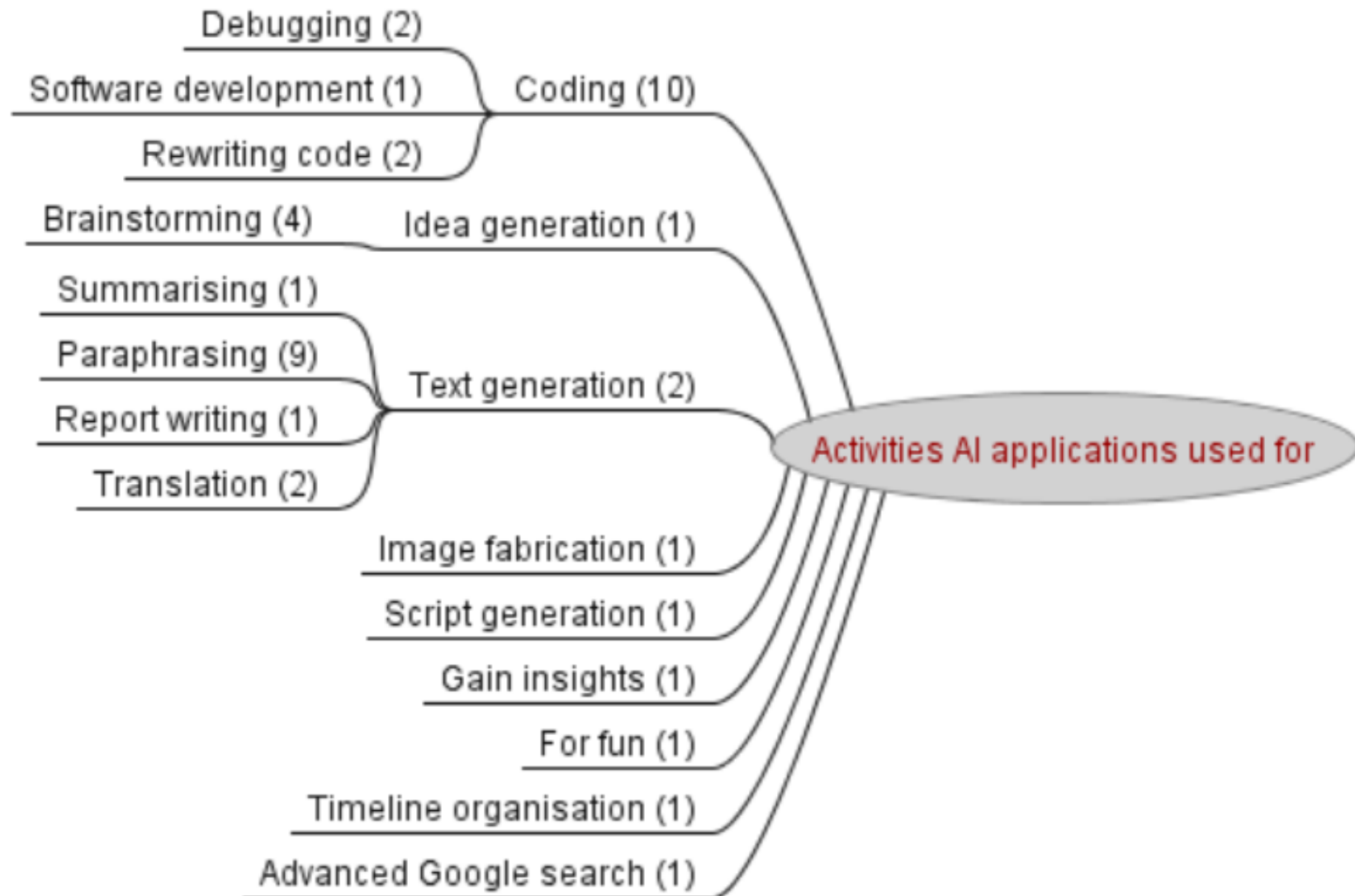


# SWOT Analysis - workshop

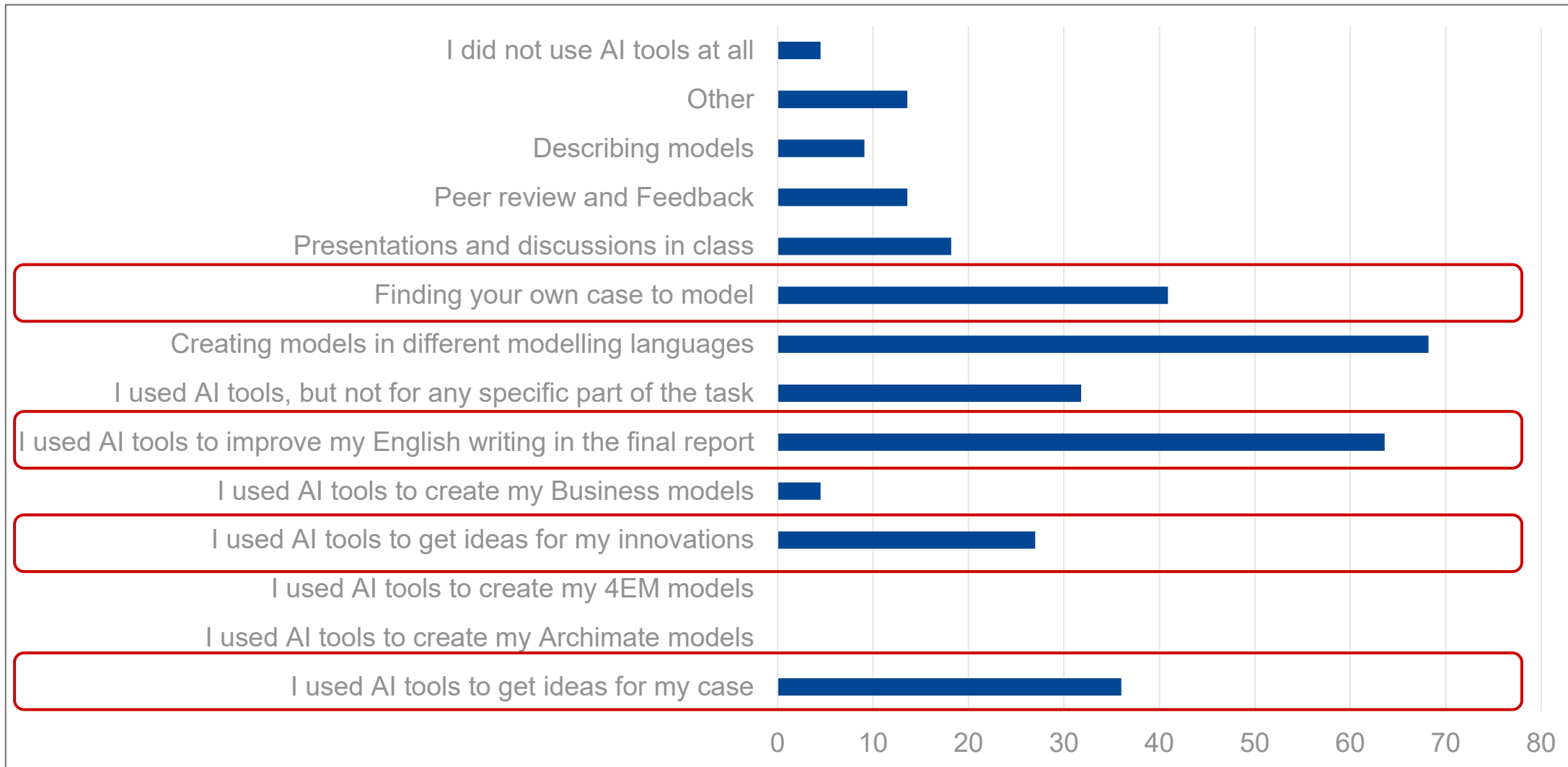


Strengths	Weaknesses
<ul style="list-style-type: none"><li>• Rewrite text, paraphrasing, recap of text,</li><li>• Translations</li><li>• Coding</li><li>• Brainstorming, Idea generation</li><li>• Formatting and structuring report</li><li>• Checking what you know, check if answers are correct</li><li>• <b>Inspiration</b></li><li>• <b>It helps you think of things that you hadn't thought of before</b></li></ul>	<ul style="list-style-type: none"><li>• <b>False information</b></li><li>• Source of the information is not provided</li><li>• Long answers, "a lot of yapping"</li><li>• Takes a lot of time</li><li>• User needs the expertise to prompt it</li><li>• You have to teach it</li></ul>
Opportunities	Threats
<ul style="list-style-type: none"><li>• Opportunity to complete assignment faster</li><li>• <b>Increased speed of idea generation</b></li><li>• As an assistant, a powerful assistant</li><li>• Solution ideation</li><li>• Optimise basic tasks</li><li>• New perspectives, new ways of thinking</li><li>• More concise texts</li><li>• <b>How to innovate your case</b></li></ul>	<ul style="list-style-type: none"><li>• Wrong information, disinformation</li><li>• It will take over our jobs</li><li>• People blindly trusting the systems</li><li>• <b>Draw the model in a wrong way. It provides a correct textual description of the model, but creates an incorrect model</b></li><li>• <b>People don't learn the contents of the course</b></li><li>• People won't research on their own any more</li><li>• <b>Guide us to the wrong understanding</b></li><li>• Problem of intellectual property</li><li>• <b>Wrong terminology</b></li><li>• Generated text could be "very formal or roboty".</li><li>• We may become over dependent on these systems</li></ul>

# What AI was used for – prior to the course

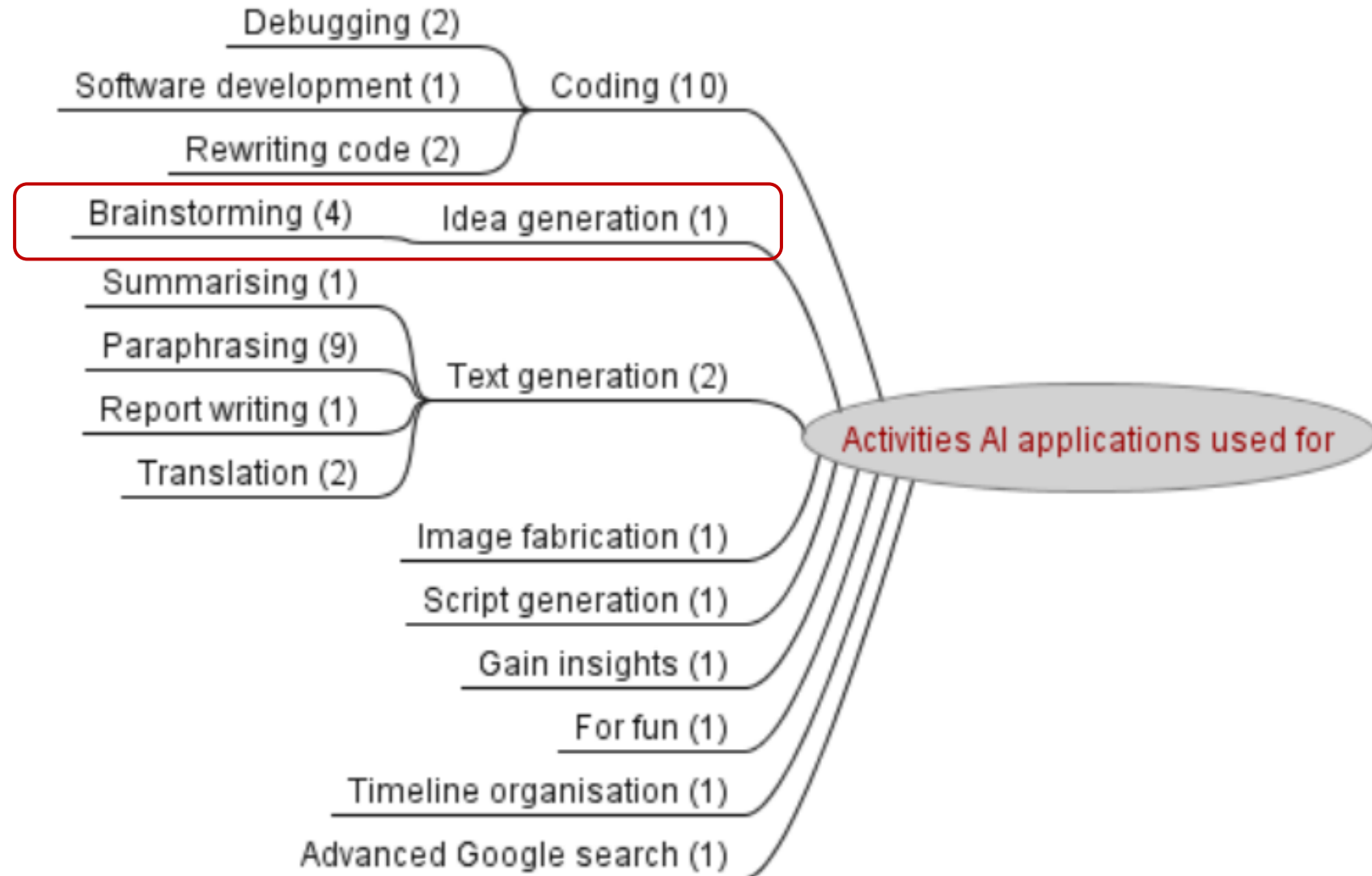


# What AI was used for in the course



# Collaborative role

- Domain expert
- Inspiring –
  - hints to get started,
  - broader understanding,
  - “a friend to talk to”
  - “the answers were so bad that it inspired me to think”.



# Pitfalls of using AI

- Main pitfalls that were identified could be grouped into:
  - **Trust** in the GAI applications.
  - What it does to us.

There is a fear that we may *“trust these systems blindly before we learn the theory about the subject we are learning and that we give too much credit to the answers from these systems. As such, we may never learn to do the work ourselves, which would be detrimental to our future jobs.”*

- *“they can't actually create the models as they are. I believe they can be trained to do so with a bit of effort, but it's probably not worth it”*
- *“AI usage is problematic when it comes to academic integrity, since the boundary between reference and plagiarism with AI is relatively vague”.*

# AI Applications for Enterprise Modelling

Noticable improvements. But not ready for creating the enterprise models and completing the assignments for the course.

2023

- No knowledge of the modelling languages.
- Provided information for the cases.
- Simple graphics, but not enterprise models.

2024

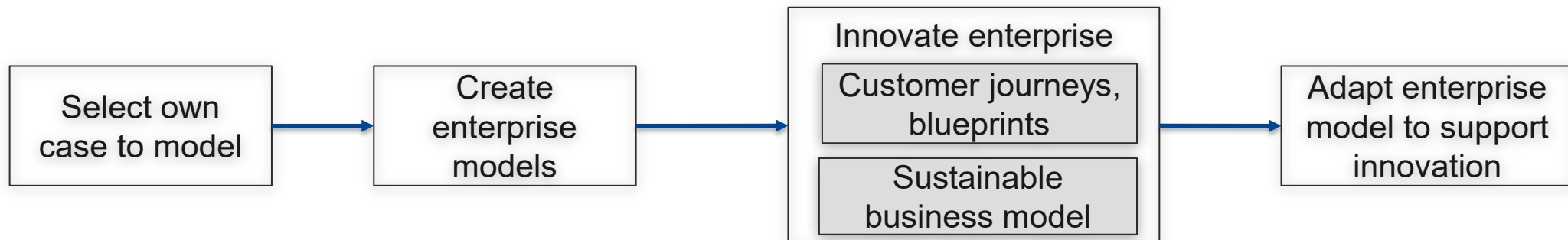
- Knowledge about one of the modelling languages.
- Ideas and information for the cases.
- Improved graphics, but incorrect.

2025

- Some knowledge about both modelling languages.
- Good analysis and ideas and information for the cases, e.g., enterprise perspectives.
- Simple graphical models, but not using the modelling languages.

# Reflections

- Managing learning outcomes and cognitive load:
  - How could AI tools contribute to the learning rather than compromise the learners' understanding?
  - How do we ensure that the students have the necessary skills and knowledge to work with the technologies effectively?
- How do we design assignments to avoid or minimise the inappropriate use of AI?
- What are the appropriate uses of AI tools for our course?



# Conclusions



- Tasks that students use AI for correspond to collaborative and participatory tasks in Enterprise Modelling.
- Common understanding among the students about the role of AI in the course.
- Pre-empt wrong use of AI.
- Update on the status of AI tools and how they could be used for the benefit of learning in the course.
- New ideas on how to adapt the learning activities in the course.
- **Informs the research activities in the area of Enterprise Modelling.**



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