

Hydrogen – a relevant factor for tomorrow's carbon-free aviation?

The CBL project aims students to recognize challenges and opportunities of hydrogen use in aviation sector and guiding them to find innovative approaches to overcome these issues. Besides, they experience working in international teams and learn how to conduct an efficient teamwork. # hydrogen in aviation #supply chains #aircraft technology

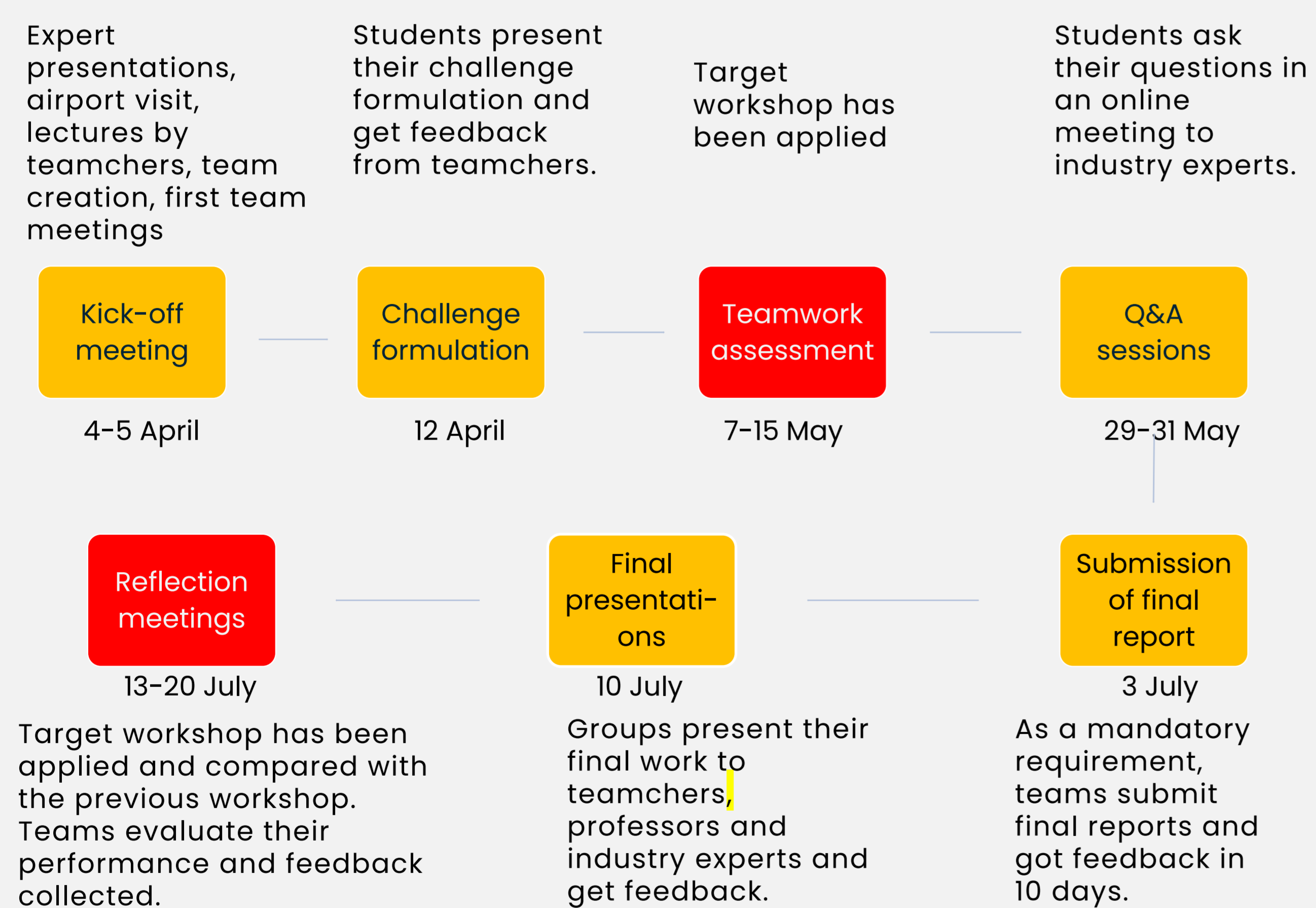
1. INITIAL SITUATION

- **Challenge title:** Hydrogen – a relevant factor for tomorrow's carbon-free aviation?
- **Course type:** Challenge Based Learning
- **Study program:** Non-technical Courses & ECIU CBL Summer semester 2024
- **Number of students:** 20 students from 3 different countries.
- **Learning outcomes:** Recognizing challenges and opportunities of hydrogen use, finding innovative approaches and evaluating them, *working in international team.*
- **Learning activities:** Presentations from experts, Q&A sessions, guided airport tour, interim group presentations.
- **Assessment:** Final written report and presentations

2. CHALLENGES & GOAL

Although teamwork can present challenges, particularly in international settings, we aimed to minimize these obstacles through structured target-feedback meetings. Each team member anonymously rated their satisfaction across four key teamwork criteria, allowing us to identify and address any issues. This approach fostered a constructive discussion environment for resolving identified challenges. We repeated this exercise at the end of the course and observed improvements across the evaluated criteria.

3. PEDAGOGICAL CONCEPT



4. EVALUATION

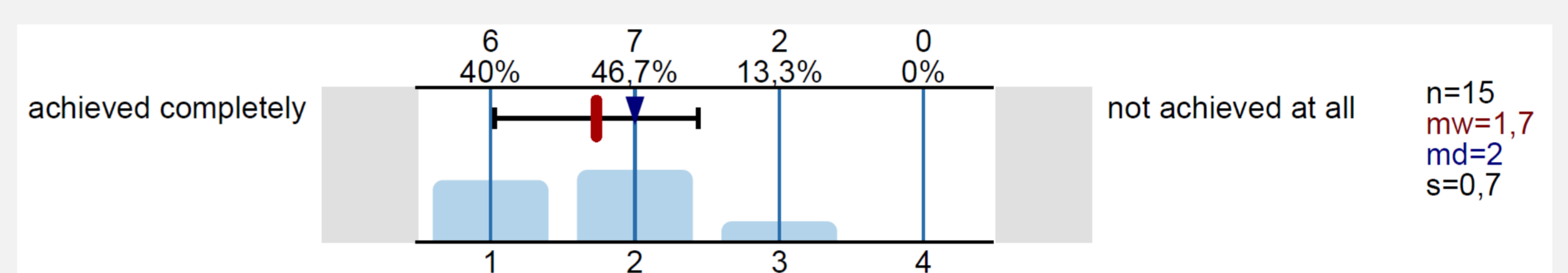
The project's effectiveness was assessed in two ways :



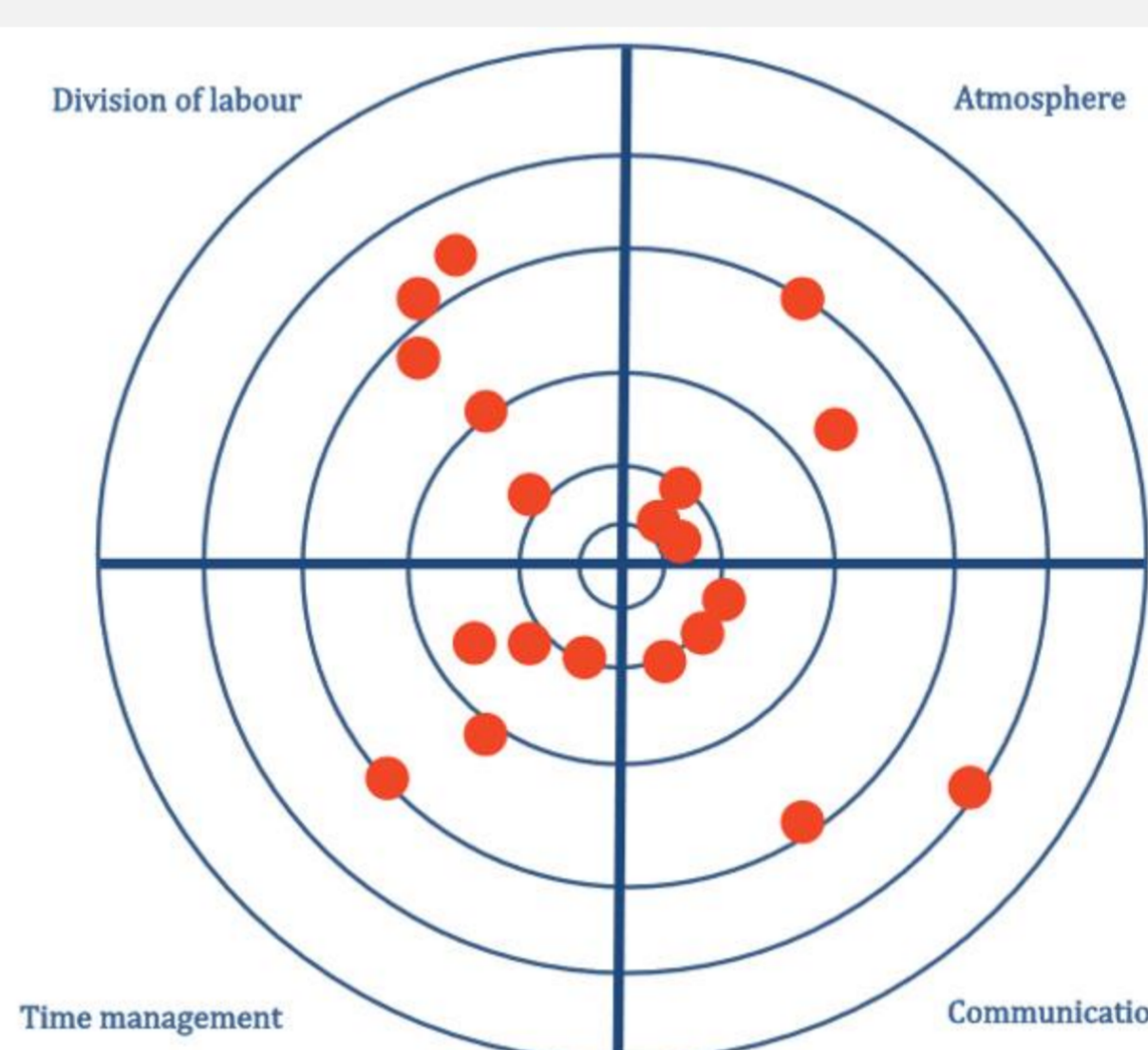
5. RESULTS

How important was it for you to achieve this learning objective?

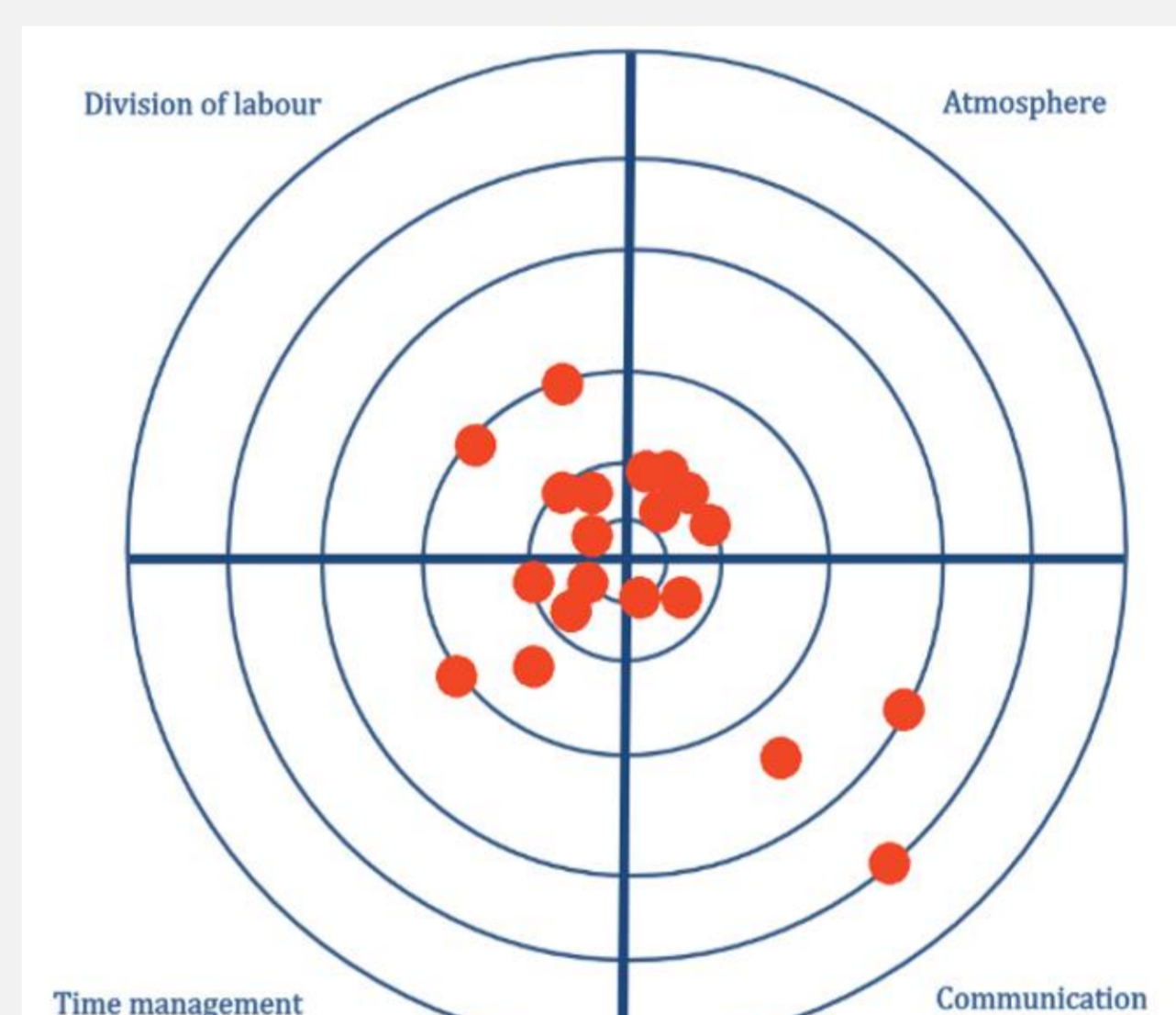
Learning goal: Working in an international team



First target meeting



Second target meeting



6. REFLECTION

Evaluation results show that learning outcomes are achieved at a good level for most of the students. Although, there is a general satisfaction, we were asked for holding another presentation session about a month before the final presentations. This way they would be more motivated in the last mile of their project and get a good feedback about content and presentations skills. Besides, self-decision and flexibility in topic selection are the "challenge" of CBL method and making it different from conventional teaching methods. Students have difficulties while selecting their topic and asked more guidance since this was not so usual for them.

7. CONCLUSION & OUTLOOK

One of the CBL project aims, focus of this poster, is to practice "working in international teams". This target has been accomplished at a good level and is improved considering the student feedback for the next round.

7. REFERENCES

- Kohn Rådberg, K., Lundqvist, U., Malmqvist, J., & Hagvall Svensson, O. (2018). From CDIO to challenge-based learning experiences – expanding student learning as well as societal impact? European Journal of Engineering Education, 45(1), 22–37. <https://doi.org/10.1080/03043797.2018.1441265>

