

WHAT IS MULTI-PERSPECTIVE COLLABORATION AND HOW CAN STUDENTS LEARN IT?

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OVERVIEW OF WORKSHOP

In this workshop we focus on multi-perspective collaboration (cf. subsection 3.1.2 of the CDIO Syllabus 3.0), how it can be integrated in Engineering education, and how students' learning of such collaboration can be enabled. We invite participants to discuss the concepts of cross-disciplinary, multidisciplinary, interdisciplinary, and transdisciplinary collaboration, share their experiences with integrating such collaboration in university curriculum, and generate ideas together on how to enable students' learning of multi-perspective collaboration.

KEYWORDS

Multi-perspective collaboration, learning, Standards 6,3,7.

DURATION

60 minutes

ACTIVITIES

Participants will sit and work in groups of four, and teaching staff from the Experts in Teamwork Academic Section will facilitate and guide the groups throughout the workshop. The workshop will have 3 parts.

Part 1: Introduction multi-perspective collaboration - 15min

We start the workshop with introducing multi-perspective collaboration in Higher education policies and frameworks (CDIO, four-dimensional education, sustainability competences) to set a frame of reference for the workshop. We then introduce definitions of cross-disciplinary, multidisciplinary, interdisciplinary, and transdisciplinary collaboration referenced in the CDIO Syllabus 3.0 (Malmqvist et al., 2019, 2020) and definitions by Klein (2021), Menken and Keestra (2016) and Boix-Mansilla (2016). At the end of this first part of the workshop, participants are asked to consider the presented concepts and discuss what definitions they use, teach, and apply in their education and/or research.

Part 2: Sharing own practices - 20min

In this part, we ask the participants to share examples from their own universities, namely what they do to enable students' learning of multi-perspective collaboration. The main purpose of sharing such practices, is for the participants to become familiar with each other's contexts before continuing their discussion in part three.

Part 3: Key factors for learning multi-perspective collaboration - 25min

In the third and final part of the workshop, we ask what factors participants consider key for students to learn to collaborate across disciplines. We invite participants to consider factors at the student, class/teacher, and the university level. A model will provide a visual anchor for the discussion, and each group is free to decide on a target group (e.g., PhD candidates, master's students, bachelor students or all students).

Towards the end of the session, we will gather the key factors from all groups and create a shared document that will be sent to all participants after the workshop.

TARGET AUDIENCE

This workshop is aimed at educators in higher Engineering education that have an interest in multi-perspective collaboration. Since the workshop builds on sharing own practices, it is beneficial for participants to have some experience with teaching multidisciplinary, cross-disciplinary, interdisciplinary, or transdisciplinary collaboration.

OUTCOMES

The expected outcome of our workshop is for the participants to

- 1) know and discuss concepts related to multi-perspective collaboration, namely cross-disciplinary, multidisciplinary, interdisciplinary, and transdisciplinary collaboration.
- 2) become familiar with how multi-perspective collaboration is taught and integrated in Engineering education.
- 3) discuss and share ideas on how to enable students' learning of multi-perspective collaboration in Higher education.

Another possible outcome is that this workshop can be the starting point for a CDIO working group on interdisciplinarity in Engineering education.

SPECIAL REQUIREMENTS

Table set-up with tables grouped to have four people sitting together. If there are participants joining online, a digital equivalent is needed in the form of breakout rooms with four participants each.

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BIOGRAPHICAL INFORMATION

Mette Mari Wold Johnson is a Doctoral candidate at the Department of Industrial Economics and Technology Management, Faculty of Economics and Management (NTNU). Her focus areas are students' learning in HE, collaboration skills, interdisciplinary collaboration, and mixed methods research. Before starting her PhD, she worked as a teacher and career counsellor.

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Bjørn Sortland is Associate Professor at the Department of Industrial Economics and Technology Management, Faculty of Economics and Management (NTNU). He holds a PhD in marine technology, and he has been involved in developing underwater technology at the Department of Marine Technology at NTNU. Throughout his academic career, he has had an interest in project work and team-based education. For 20 years, he has been the academic responsible person for the course Experts in Teamwork, which has been recognized with several awards and is now NTNU's signature course.

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