

ENABLING LEARNING AND COMPETENCE DEVELOPMENT OF STUDENTS IN EXTRACURRICULAR ENVIRONMENTS

Ana Valencia, Chantal Brans, Isabelle Reymen, Eugenio Bravo, Bart Koppelmans

TU/e innovation Space, Eindhoven University of Technology

Jan van der Veen

Eindhoven School of Education, Eindhoven University of Technology

OVERVIEW OF WORKSHOP

At Eindhoven University of Technology (TU/e), students organize themselves in interdisciplinary student teams to tackle complex societal challenges through technology development (overview of all teams <https://www.tue.nl/en/our-university/student-teams/>). As of January 2022, TU/e innovation Space, the *center of expertise for Challenge Based Learning and student entrepreneurship* at TU/e, facilitates the learning and development of around 700 students participating in extracurricular student teams: a number indicative of the increased importance of this type of learning in our institution. Students join these extracurricular teams because they are seen as vessels to give back to society, and to develop themselves professionally. Through participation in extracurricular student teams, students can explore and gain new competences (i.e., skills, attitudes, and knowledge), and gain more awareness of the type of engineer they want to be. However, the breadth and depth of this learning are still implicit. Attaining a better understanding of student learning and competence development in this context is important to better support this type of learning of the students (Reymen, 2021). How can we help students to make their learning more explicit? How can we support students to make more informed decisions about their learning, such as choosing appropriate learning experiences that link to their development goals? In this workshop, we want to further explore this problem with the CDIO community– and co-create a solution (i.e., educational intervention, such as a tool for learning, an activity, a process, or a combination of them) to make student learning in extracurricular student teams more visible and explicit.

KEYWORDS

Competence development, extracurricular learning, personal learning paths, standards 2, 3, 7.

DURATION

The length of this workshop is 60 minutes.

ACTIVITIES

The workshop aims at ideating on solutions (i.e., educational interventions) to enable extracurricular student's learning and competence development. For an overview of the setup of the workshop, see Table 1 below.

Table 1. Overview of Activities

Duration	Activity	Aim
15 mins	Introduction to context, problem, and approach.	Aligning participants on the context and purpose of the workshop.
10 mins	Identifying Opportunities (In groups)	Based on experiences from their respective institutions, participants brainstorm about the strengths/weaknesses in their extracurricular programs. Based on these, opportunities for improvements are identified and prioritized.
10 mins	Plenary discussion	Groups share prioritized opportunities for extracurricular learning.
10 mins	Ideating solutions (Same groups)	Based on insights on strengths and weaknesses in their extracurricular programs, participants ideate on how to make extracurricular learning visible.
15 mins	Plenary discussion and overall conclusion	Organizers share outcomes of the project with the participants (i.e., blueprint for educational intervention). The outcomes of the workshop are compared to the results of the project.

TARGET AUDIENCE

Teachers, policy advisors, education managers, education support officers, education researchers. No background knowledge or preparation is required from participants but familiarization with the CDIO syllabus (Crawley, 2001; Malmqvist, 2022) is recommended.

OUTCOMES

We aim to facilitate the sharing of best practices, and learning among participants, on how to best support competence development in extracurricular environments of these characteristics. This workshop is one in a series of similar co-creation sessions that will be conducted, among others, with extracurricular students and relevant stakeholders within TU/e. We will discuss the outcomes of the session with the CDIO community against those from sessions with the TU/e community to validate our concept, and to inspire participants.

SPECIAL REQUIREMENTS

No special requirements apply to this workshop

REFERENCES

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BIOGRAPHICAL INFORMATION

Ana Valencia is an education designer and project manager of the project searching for the awarding of the learning of students. In the past few years, she has done ample research on assessment of Challenge-Based Learning.

Chantal Brans is the program manager education innovation and the manager of the future university project. With her background in psychology, she especially invested in the change process within the institute.

Isabelle Reymen is the scientific director of TU/e innovation Space and professor design of innovation ecosystems. She started TU/e innovation Space with the ambition to structurally change education and after 7 years she is the director of an award-winning team with never-ending ambitions.

Eugenio Bravo is an educational researcher in the project "Extracurricular Learning & Competence Development" at Eindhoven University of Technology. He is interested in engineering education innovation and, in particular, in the topic of competence development in Challenge-Based Learning. He was involved in the implementation of Challenge-Based Learning courses at the University of Chile Engineering School.

Bart Koppelmans is a student assistant for the coordination of the "Student Teams and Extracurricular Learning" program. With a combined background of Computer Science and Innovation Management, he focuses on learning in practice.

Jan van der Veen is a full Professor at the Eindhoven School of Education at the TU Eindhoven. His research focus is on innovating STEM education in secondary and higher education including the professional development of STEM educators. He contributes to the international community working on rewarding teaching excellence.

Corresponding author

Ana Valencia
Eindhoven University of Technology
TU/e innovation Space
De Rondon 70, 5612 AP Eindhoven
The Netherlands
A.M.Valencia.Cardona@tue.nl



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