

# **Workshop: Custom chatbots for collaborative learning in higher education: A hands-on, co-creation workshop**

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## **Workshop description**

The growing presence of generative artificial intelligence (GenAI) powered tools in higher education has sparked reactions ranging from tech-euphoria to tech-dystopia among teachers, students, academics, and the wider public and yet the integration of chatbots into educational practices remains uneven. Existing research shows that most educational AI applications continue to mirror dominant teacher-centred approaches and primarily support individual and closed learning formats (Xu and Ouyang 2022). As a result, the role of chatbots in more open, collaborative environments such as problem-based learning (PBL) is still insufficiently explored. Recent reviews highlight a persistent misalignment between learning strategies and the ways chatbots are designed and implemented, pointing to issues of limited contextual precision, reduced transparency, and the opaqueness of proprietary systems (Wollny et al. 2021; Hwang and Chang 2023; Labadze et al. 2023; Otto et al., 2025). These challenges become particularly visible in our local educational context of problem-based learning, an educational approach that reflects key elements of networked learning such as collaborative inquiry, shared construction and distribution of knowledge, and work with situated and open-ended problems in project groups (McConell et al., 2012). In the Aalborg model of PBL at Aalborg University, students are organised in project groups of 3-7 members (varying by discipline and semester), throughout an entire semester where they engage with complex real-world problems.

Within project groups, general-purpose chatbots often fall short in supporting the situated nature of students' work. Their reliance on broad, general knowledge sources can lead to inaccuracies or irrelevant output when students engage with specialised or emergent project contexts. Moreover, the undisclosed or uneven use of GenAI by individual group members can create opacity in collaborative processes, create shadow workspaces and undermine trust and shared responsibility (Otto et al., 2025). The "black box" character of many commercially developed chatbots further complicates efforts to ensure equitable participation and mutual understanding in group work (Bozkurt et al. 2023).

Against this backdrop, we created a teacher/student workshop for co-creation and community-owned custom chatbots (Lyngdorf et al., 2025) to offer an alternative to the commercially available ones and for exploring more pedagogically aligned integrations of GenAI in higher education. By involving students directly in the design and framing of a chatbot, the technology becomes embedded in and part of the collaborative environment of the project group rather than acting as an external, pre-structured tool, for students to open what could otherwise be considered a black-box (Ejsing-Duun et al., 2022). Such student-centred design processes may enhance transparency around AI use, strengthen trust among group members, and support more authentic alignment between chatbot and group practices and principles of networked learning. This resonates with work on co-creation in learning, which suggests that participatory design processes can support deeper engagement and a stronger sense of ownership (Kaminskiene et al. 2020).

This workshop responds to these developments by providing a structured space to examine the opportunities and constraints of student-designed, community-owned chatbots within networked learning contexts. The focus is not on promoting chatbot adoption, but on critically exploring how co-creation might address current pedagogical challenges, support collaborative learning practices, and contribute to more transparent and pedagogically grounded uses of GenAI in higher education.

## **Intended audience**

This workshop is intended for anyone who have an interest in co-creation and design processes with students and chatbots in higher education. We welcome teachers, students, researchers and learning designers across disciplines to collectively and playfully explore why co-creating chatbots with students is relevant in networked and collaborative learning environments and how this approach can answer some of the challenges posed by the introduction of GenAI in education. In digital pedagogical models such as TPACK, technology is typically understood as having stable and predictable functions that can be deliberately integrated into a learning design.

However, LLMs are probabilistic and far more open-ended than typical edtech tools, which call for both students and teachers to develop a type of speculative thinking skill that enable them to anticipate possible scenarios, emerging needs, and the evolving roles of chatbots in future learning contexts.

## Participant engagement

The workshop will scaffold active participant engagement through collaborative co-creation activities that foreground dialogue and reflection. Working in small groups, participants will develop a contextually situated chatbot by articulating its role and behaviour model in relation to specific objects. This process will involve a blend of ideation and brainstorming activities, collaborative writing, discussions and decision making, alongside knowledge sharing across groups.

## Participant outcomes

At the end of the workshop participants will have:

- Collaboratively explored how educators can work with alternatives to large general purpose chatbot providers.
- Learnt what a system prompt is and how we as educators and students actively can work on creating pedagogically grounded and context specific systems locally and together with students.
- Reflected on how we can balance agency and ownership when working with AI-technology.
- A take home system prompt that can be adopted to participants home university chatbot platform.

## Workshop alignment with conference themes

With this workshop proposal we wish to engage critically and creatively with core aspects of networked learning while exploring the conference theme of:

- Future of teaching and value-based AI supported networked learning (e.g., innovative pedagogies, Human-centered AI, values-driven AI applications, ethical AI integration in education).

Inspired by the discussions on “balancing utopia and dystopia in visions of AI and open data” in Dohn et al. (2023), we find it important to explore and share how we work on developing a value-based AI supported networked learning approach. We see co-creation with and between students as a democratic and inclusive approach to GenAI technology. The workshop itself makes use of speculative future scenarios as trigger cases for working co-creatively, collaboratively and with community ownership in mind. This part of the workshop has been strongly inspired by the multi-author speculative paper by Bozkurt et al. (2023).

We also draw on work and understandings from the postdigital literature that intersects with networked learning and offers a critical lens for understanding interactions with digital technology in situated, sociomaterial activities in which the digital makes up “part of an integrated totality” (Fawns, 2018; NLEC, 2021, p. 314).

Networked learning calls for entangled processes such as those we propose to experiment with in collaborative environments like student groups and attempt to address ethical issues like collective ownership, power, trust, difference and solidarity while facilitating genuine and effective co-creation (NLEC, 2021). The processes and outcomes of the workshop have potential to inform broader institutional discussions and policies on the use of GenAI in education. This includes concerns about data sovereignty in a constantly shifting geopolitical landscape as well as the influence of corporate agendas that do not prioritise education alone. In parallel, educators face ethical obligations concerning student trust, transparency, and the responsible integration of emerging technologies into learning environments.

## Workshop process/activities

The workshop will be structured in four parts:

1. Introduction and speed lectures (15 minutes)
2. Departure based on future scenario trigger cases (15 minutes)
3. Co-creation of system prompts for custom chatbots (45 minutes)
4. Plenary sharing and reflection (15 minutes)

In part 1, we give a short introduction to the topic of chatbots in higher education and what our approach adds. We will quickly touch upon pedagogical tenets of ownership and agency that will be needed later in the workshop for writing a purposeful system prompt with consideration for learning.

In part 2, participants will be presented with utopian and dystopian speculative future scenarios of how chatbots might be integrated into collaborative contexts in higher education. These will function as trigger cases for imagination and frame the need for teacher and learner agency and ownership in relation to GenAI adoption.

In part 3, we will ask participants to collaboratively write a system prompt for their own co-created chatbot. The system prompt has to respond to one of the scenarios presented in part 2 and consider how learning can be augmented and not replaced (Molenaar, 2023). This part will involve collaborative brainstorming and writing in iterative cycles of refining the system prompt and testing it in real time.

In part 4, we will invite groups to share system prompts and their experiences of how it worked. We hope this will lead to a discussion of whether or not co-created chatbots could be a student-centered alternative to other more teacher-centered implementations of GenAI and what challenges and possibilities participants see.

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