Kasper Munk: Engineering digital learning of conceptually driven decision-making

The aim of the project is to develop a new teaching approach, which focuses on concept learning. Traditionally, the teaching of complex concepts in schools and in universities has been restricted by what was possible through speech and writing. The idea is to experiment with new technologies and examine the ways they can assist the demonstration and experiencing of conceptual structuring of decision-making.

The key research questions are:

- Can externalisation of commitments to inferential norms assist the learning of active concepts, and, if so, how can such externalisation be built into digital learning interfaces?

- Can externalisation of conceptual organisation of perspective assist the learning of active concepts, and, if so, how can such externalisation be built into digital learning interfaces?

The project combines design science research methodology (DSRM) with a more traditional experimental setup. Through multiple reasoned reconfigurations, the intervention is developed while testing basic assumptions about the learning processes in context, relying on a range of data sources such as observations, interviews, video and learning analytics. The experimental setup will focus on pre- and post-intervention measures collected through tests within the online module itself. Students from the large courses (N>500) will have different variations of the online modules assigned randomly, allowing for comparison between the different experimental conditions.

The novelty of this project is the development of learning engineering principles that follows the ways concepts structure decision-making. The project thereby engages with basic discussions about how concepts are learned and used. At the same time, the focus on engineering learning experiences around conceptual content marks a point of departure from subject-matter-indifferent developments within educational technology.