

# Session 1c

## Paper

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### Supervision support for student inquiry and agency in natural science

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#### Program text

We consider the ways supervisors scaffold student-directed inquiry projects to develop student agency and substantive conversation in PPL at RUC using discursive data from supervision sessions.

#### Abstract

##### Introduction

Although there is ongoing interest in inquiry-based science education at practice, research, and policy levels, the methods advocated often remain teacher-initiated and teacher-led. In contrast, this study considers a distinct form of student-directed inquiry practised in science education at Roskilde University (RUC) in Denmark. In problem-oriented project learning (PPL), student groups work with a supervisor to develop the topic of inquiry, negotiate and trial the experiment design, and consolidate the results into a collaborative report.

##### Theoretical Outlook

The study draws on Dewey's (1938) understanding that scientific inquiry is a practice, where scientists – including student scientists – engage actively in decision-making and evaluation processes. We combine this with a view of student agency in learning situations – considering the instances where students demonstrate curiosity, using their own interests to take intentional and reflective action within learning environments to influence their educational trajectories (Klemenčič, 2015).

##### Method

With an aim to investigate how supervisors support student agency and substantive conversation in PPL, we work with video data recorded during supervision sessions conducted in 2020. A discursive analysis of transcripts of student-supervisor conversations provides insight into student agency and supervision strategies that support substantive student thinking in student-designed inquiry.

##### Results

Our analysis explores the role of questioning, listening, and responding in supervisor-student learning conversations, with an aim to identify the discursive techniques supervisors use that support substantive student thinking.

##### Discussion

Our considerations explore the importance of reciprocity in dialogue between students and supervisor. We are especially interested in the role of listening techniques as students articulate in-process and unfinished thinking, and how questions scaffold and support student inquiry.

#### Author(s)

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#### Literature

Dewey, J. (1938). *Logic: The theory of inquiry*. Henry Holt and Company Inc.

Klemenčič, M. (2015). What is student agency? An ontological exploration in the context of research on student engagement. In M. Klemencic, S. Bergan & R. Primožic (Eds.) *Student engagement in Europe: society, higher education and student governance*. Council of Europe Higher Education Series No. 20, 11-29. Council of Europe Publishing.

