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STRUCTURING PBL AROUND STUDENTES' OWN PROJECTS: TOWARDS A FLIPPED SEMESTER APPROACH

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The problem-based learning (PBL) model at Aalborg University is known for a strong emphasis on learning through students' own projects, supporting a mix of collaboration skills and subject specific skills through an integrated structure of course work and project work (Andreasen & Nielsen, 2013, p. 215-18; de Graaff & Kolmos, 2003; Kofoed & Stachowicz, 2013). In general, there is however currently a tendency that many courses take away students' time from their work on the semester project. Thus, it is an overall challenge to establish a better interplay between courses and students' project work.

Over the years, an increased use of digital tools for communication, data construction, and collaborative writing has developed among both students and teachers. We therefore need a deeper understanding of how digitized learning environments may influence students' PBL skills as well as the general semester structure of courses and projects.

A new research project; "Future directions for PBL in a digital age" will be carried out 2017-20 at Aalborg University (AAU), Denmark, with an overall aim to examine and challenge the models of PBL. The research project has several subprojects. One of these; '*Towards a flipped semester PBL approach'* looks into changing the structure of a semester to increase focus on students' problem-based and project-organized learning activities. The

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subproject will study the impact of integrating digital resources and methods in the PBL learning environment, in order to develop the interplay of courses and students' project work and support the students' learning outcome and development of PBL competences.

To unfold different aspects of how to establish flipped PBL learning environments, ethnographic studies will draw experiences from eight already established ICT- and PBL-related developmental projects, each targeting specific programs at Aalborg University. These development projects focus on either digital tools (in the context of courses or project work) or the structuring and integration of flipping the classroom.

By drawing on experiences from these development projects the subproject will be able to discuss how students' projects could integrate elements from courses and vice versa, improve efficiency and quality for the teaching and project supervision, as well as the overall PBL learning process for students.

Several of the development projects work with flipped classroom strategies, using digital tools for turning the sequence and content of a class upside down. This is done e.g. through using videos, quizzes and other resources to provide content as homework, which would otherwise be given during a conventional lecture, and then use the time in class for dialogue and discussion (Triantefyllou et al., 2016). Studying the practices of flipped learning may be an inspiration for a "flipped semester" approach. Instead of starting the semester with a number of mandatory courses and finishing with a shorter project work, a flipped semester approach could let student-chosen problems be the starting point for a project work covering the whole semester, adding the physical or digital knowledge resources that appear relevant to the specific project. The ethnographic studies of the development projects will serve as a base for new initiatives and experiments with a flipped semester approach, which will be carried out and studied in the second phase of the subproject.

The ongoing studies have already shown some nodes that will be interesting to look more into, for example the interplay between using digital tools out-of-class or in in-class activities, or what the production of more data, when using digital tools, can contribute to.

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