



TOWARDS A FLIPPED SEMESTER PBL APPROACH: A CROSS-CASE ANALYSIS OF FLIPPED CURRICULUM INITIATIVES AT AALBORG UNIVERSITY

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The PBL Future project is a new extensive cross-faculty research initiative at Aalborg University (AAU) aimed to develop research-based directions for problem- and project-based learning in a Digital Age. In addition to several subprojects, the research initiative includes a comprehensive baseline study mapping out existing practices of PBL at AAU including local development projects and innovative approaches e.g. to curriculum design and integration of ICT. This paper presents initial findings particularly related to flipped curriculum initiatives in current practice across different study programs at AAU. The purpose of this study has been to explore possibilities and challenges related to the organization of and interplay between course activities, self-directed study activities and supervised project work from the perspective of both teacher and student. Initial findings from a cross-case analysis of the first four out of eight flipped curriculum initiatives will be presented with regard to teachers' goals, planning and preparation processes and challenges as well as students' experiences, which we will explore further on a larger scale in the subproject "Towards a flipped semester PBL approach" aiming to explore the potential of flipped curriculum in the development of next generation blended PBL learning models and principles at AAU.

At AAU, problem-based learning is implemented at institutional level and although it is practiced slightly different across faculties, departments and study programs, these share common PBL principles e.g. taking departure in students' contextual problem understanding, team-based and self-directed learning and interdisciplinary project work (Kolmos & Graaff, 2014). Consequently they also share the common challenge of ensuring the consistency and sustainability of these PBL principles, skills and competences in a digital age.

The term "flipped classroom" is commonly used to define a specific approach to blended active learning, aiming to provide just-in-time knowledge through online materials and ICT tools and encourage increased interaction between students and teachers e.g. through workshops, discussion groups, peer-learning, criticisms, seminars etc. rather than traditional

lectures. Recently, the term “flipped curriculum” (Ortiz, 2016) has been introduced to expand the idea of “flipping” from classroom activities to entire semester curriculum to meet students’ needs and expectations regarding the integration of digital tools and digitized learning environments in their education and to facilitate pedagogical innovations taking advantage of Massive Open Online Courses (MOOCs) and Open Educational Resources (OERs) in problem-driven and open exploratory processes negotiated amongst students, teachers and supervisors (Ortiz, 2016).

At AAU, several small-scale “flipped classroom”-experiments are being carried out, however these initiatives are seldom internally coordinated and have yet to be systematically studied and disseminated both internally in the organization and externally to relevant stakeholders. Thus, the PBL Future research initiative includes an initial analysis of current initiatives involving flipped classroom/curriculum and blended learning elements at AAU, identifying potentials and barriers and relevant aspects related to the efficiency and quality of the teaching, supervision and student learning processes. This involves several case studies across both campuses in Aalborg and Copenhagen, across most faculties, involving different and diverse departments and study programs including but not limited to Communication & Digital Media (Humanities), Architecture & Design and Medialogy (IT & Design), Networks & Distributed Systems and Chemistry & Bioscience (Engineering & Science) as well as Business Administration (Social Sciences) with more than 600 students participating in these initial experiments in total.

From the initial analysis of the four flipped curriculum initiatives taking place in the fall 2017, we found that although the design and planning processes as well as practical organisation of the local experiments varied greatly, they also to some extent share goals and encounter similar challenges on both organisational level, teacher level and student level, e.g. related to use of ICT platforms and tools, time and resource management, student and teacher motivation as well as evaluation and documentation of learning in relation to course objectives. Data in this analysis include curriculum designs, ICT tools and resources, interviews with coordinating teachers and focus group interviews with students. In the spring 2018, these initial findings will be explored further in the remaining four case studies, and data will be supplemented with surveys, course evaluations and observations.

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