

# FLIPPED PBL CURRICULUM – CREATING THE NEXT GENERATION OF PBL LEARNING PRINCIPLES

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**Abstract:** Aalborg University (AAU) is internationally recognized for problem- and project-based learning (The Aalborg PBL model). As a part of the university's quality assurance of education, the PBL principles are reviewed on an ongoing basis. To continue developing the PBL to fit the competencies of the future, AAU has invested 4.2 million divided between 23 PBL development projects. The first step is to integrate ICT directly into the PBL model. Based on one of the project's teaching cases, this paper presents how flipped curriculum and ICT mediated learning activities can integrate ICT in the PBL principles in higher education.

**Keywords:** Problem-based Learning, Flipped curriculum, information-and communication technologies

## Introduction

Internationally and nationally, problem solving, collaboration and communication are highlighted as skills the workforce must possess in the 21st century (Kolmos, Fink, & Krogh, 2004; Voogt & Roblin, 2012). The principles of PBL educate students to solve problems, engage in collaborative relationships and to communicate with different actors in a globalized labor market (Holgaard, Ryberg, Stegeager, Stentoft & Thomassen, 2014). Although PBL is a distinctive feature of Aalborg University (AAU), the principles have been challenged in the recent years. An increasing uptake of students, challenges with the physical environment, as well as national regulation and standardization (Hüttel & Gnaur, 2015) have resulted in that a significant part of the teaching is being conducted as lectures and with the PBL aspects slipping into the background. Moreover, research has revealed that students, even though they are considered as digitally competent students in a PBL university, are less advanced in their use of ICTs for learning than often assumed (Heilesen & Davidsen, 2016).

The current project is realized through a redesign of four teaching cases, where the learning design is fundamentally redesigned - both pedagogically and resource wise. The main idea is that the individual teaching cases are not only flipping the lectures, but rather that the student's problem-based projects become the point of departure for the progression of the courses and the teachings. Thus, the project contributes to the creation of the next generation of PBL learning principles. The teaching case, presented in this abstract, is a 5. semester module

(10 ECTS) in the program Communication and Digital Media. The course has 63 students and ends with an oral exam, based on a 15-pages project report. The course content concerns students' Digital Scholarship at PBL-universities, and the course framework is inspired by Design-based Research.

## **Methods**

The pedagogical framework is inspired by the concept: "Flipped Curriculum". The idea is that instead of teacher-directed courses, the teachers make materials, lectures and activities available online; and the face-to-face time between teachers and students are organized as workshops, discussion groups, peer-learning and critique, and seminars. Most importantly, the change concerns a shift in focus from a mainly teacher-organized logic of progression, towards a stronger focus on making the students' problem based projects the central driver of the course.

## **Results and Discussion**

In the module there was a high degree of student involvement. The groups worked independently and with commitment concerning discussion of literature, sharing notes, and making decisions. They continuously produced a number of videos to maintain and share their acquired professional knowledge. Concerning the teachers, there was also a high degree of commitment. Though, the teachers were challenged due to busy-ness preparing the online materials and facilitating the workshops.

In many ways this teaching case demonstrated that flipped curriculum inspires to revitalizing problem-oriented group work, but with online courses, resources and materials. Still, we need a continued analysis and experience exchange about: what can technology do for students, teachers and PBL?

## **References**

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