

Adapting Problem-based Learning (PBL) to bridge higher education and the labor market. Examples from Aalborg University

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Contributors

1st paper: Kjeld Svidt, Simon Christian Swanström Wyke, Lone Krogh, Annie Aarup Jensen and Ole Ravn: *Short term PBL-events for intensive learning in HE*

2nd paper: Antonia Scholkmann and Anja Overgaard Thomassen: *Let's get real! Bridging PBL project work and working life – a case study from Organizational Learning*

3rd paper: Elisabeth Lauridsen Lolle and Antonia Scholkmann: *A fresh glance: What students perceive they learn through PBL, and how this relates to normative and operative competence goals*

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Synopsis (max. 400 words)

Providing higher education which is also relevant for a society and its labor market is one of the biggest challenges in the educational system of today (e. g. George, 2006; Gibbons, 1998; Teichler, 2015). This provision of relevant higher education calls for the implementation and use of instructional formats which hold the power to bridge research, teaching and practice in a feasible way (e. g. Gómez et al., 2007). Specifically, respective formats for that must provide both learning for the development of a scholarly mindset and for the acquisition of work-related generic and discipline-specific competences (e. g. Chu, Reynolds, Tavares, Notari, & Lee, 2017).

Aalborg University holds a long tradition of basing its teaching on the principles of Problem-based Learning (PBL, e. g. Kolomos, Fink, & Krogh, 2004). Parallely, the Danish higher education sector in general is focused on providing societally relevant learning outcomes (Vingaard Johansen et al., 2017), with in the last two decades establishing a close relation with stakeholders from the corporate world to ensure the relevance of candidates' competences for the labor market. At Aalborg University this shows as a dual relevance orientation throughout the study programs, with a specific, yet continuously evolving interpretation of Problem-based Learning that explicitly addresses the connection between scholarly learning and the use of the knowledge in concrete vocational fields.

The present symposium will present current examples of how PBL is used at Aalborg University to provide an education which addresses both the development of a scholarly mindset and the affordances of the (Danish) labor market. This comprises cross-faculty collaborations and an adaption of the traditionally semester-long PBL project work to fit with a more timely, short-term format (paper #1), the collaboration with a local company in early stages of a study program (paper #2) and the re-conceptualization of competence expectations towards PBL through the student perspective

(paper #3). Together the three papers shed light on both instructional variations and new conceptions of intended outcomes of learning with the PBL approach in the light of a close relation between higher education and the societal affordances.

Keywords: Problem-based learning, inquiry-based instruction, labor market, competences, workplace integration

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Descriptions of single submissions (150 words, each)

Short term PBL-events for intensive learning in HE

In this part of the session we will analyze different practices of intensive short term PBL events from Aalborg University that relate to employability. First, we explore the 3-day PBL workshop called *Digital Days* in the field of Building Information Modeling. It is an annual event since 2010 that invites construction engineering students from different institutions and different study programs to participate in PBL group work on a particular building project. External partners are integrated in the project in different ways, and groups finalize digital plans for their proposed building within the three days for a final presentation. From interviews with students and external partners we discuss how the workshop functions as an employability platform where students meet the real-life issues of interdisciplinary teams in the construction business.

Finally, we discuss alternative models that focuses on students working across faculty borders or solution camp workshops hosted by a specific organization.

Let's get real! Bridging PBL project work and working life – a case study from Organizational Learning

In the second part of the session a case study will be presented, which was undertaken following the merging of PBL activities and authentic case work with a regional company. The specifics of this

project were that the confrontation with the authentic cases happened early on in the study program (i. e. in the second semester), with students being challenged to generate relevant answers to authentic questions of the company, based on relatively little previous knowledge.

The course was evaluated in a quantitative pre-post research design focusing on students' attitudes towards the learning experiences, as well as their self-perceived competence development throughout the course. Additionally, interviews with both students and representatives of the company were conducted.

In the session results from the mixed-methods analysis will be presented to shed light to the question, which factors facilitate successful learning in a format bridging PBL with challenges from a real work environment.

[A fresh glance: What students perceive they learn through PBL, and how this relates to normative and operative competence goals](#)

In the third part of the session the authors will present the results from an in-depth, multi-source qualitative study with students from various programs at Aalborg University. Participants over one semester reflected on their perceived competences and developments, using multiple tools such as digital portfolio, mind maps and chats, and attended three face-to-face discussion workshops with the research team. All material gathered throughout this was analyzed in contrast to normative descriptions of the study programs, and also to existing evidence of students' competence acquisitions in PBL-curricula from quantitative survey studies. First results show that students for one don't see PBL as the guiding principle for their competence acquisition but are steered by other (life-)events, and also that in the students' eyes learning is even stronger related towards labor-market affordances than the intended learning outcomes of the respective programs assumed.