

Implementation of Project-Based Learning with Peer Assessment in Large Classes under Consideration of Faculty's Scarce Resources

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Abstract : To overcome the negative consequences associated with large class sizes and to support students in developing the necessary competences (e.g., critical thinking, problem-solving, or team-work skills) a marketing course has been redesigned by implementing project-based learning with peer assessment (PBL&PA). This means that students can voluntarily take advantage of this supplementary offer and explore -in addition to attending the lecture where clicker questions are asked- a real-world problem, find a solution, and assess the results of peers while working in small collaborative groups. In order to handle this with little further effort, the process is technically supported by the university's e-learning system in such a way that students upload their solution in form of an assignment which is then automatically distributed to peer groups who have to assess the work of three other groups. Finally, students' work is graded automatically considering both, students' contribution to the project and the conformity of the peer assessment. The purpose of this study is to evaluate students' perception of PBL&PA using an online-questionnaire to collect the data. More specifically, it aims to discover students' motivations for (not) working on a project and the benefits and problems students encounter. In addition to the survey, students' performance was analyzed by comparing the final grades of those who participated in PBL&PA with those who did not participate. Among the 260 students who filled out the questionnaire, 47% participated in PBL&PA. Besides extrinsic motivations (bonus credits), students' participation was often motivated by learning and social benefits. Reasons for not working on a project were connected to students' organization and management of their studies (e.g., time constraints, no/wrong information) and teamwork concerns (e.g., missing engagement of peers, prior negative experiences). In addition, high workload and insufficient extrinsic motivation (bonus credits) were mentioned. With regards to benefits and problems students encountered during the project, students provided more positive than negative comments. Positive aspects most often stated were learning and social benefits while negative ones were mainly attached to the technical implementation. Interestingly, bonus credits were hardly named as a positive aspect meaning that intrinsic motivations have become more important when working on the project. Team aspects generated mixed feelings. In addition, students who voluntarily participated in PBL&PA were, in general, more active and utilized further course offers such as clicker questions. Examining students' performance at the final exam revealed that students without participating in any of the offered active learning tasks performed poorest in the exam while students who used all activities were best. In conclusion, the goals of the implementation were met in terms of students' perceived benefits and the positive impact on students' exam performance. Since the comparison of the automatic grading with faculty grading showed valid results, it is possible to rely only on automatic grading in the future. That way, the additional workload for faculty will be within limits. Thus, the implementation of project-based learning with peer assessment can be recommended for large classes.

Keywords : automated grading, large classes, peer assessment, project-based learning

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