

Evaluation of PBL in Communication Networks I

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Communication Networks I is an elective 6 ECTS module on master level for Computer Science (CS), Computer Science and Engineering (IIW), Electrical Engineering (ET), Information and Communication Systems (IMPICS) and Microelectronics and Microsystems (IMPMM). The module consists of a 2-hour lecture and 3 hours of Problem-Based Learning (PBL) and takes place in the winter term. It was redesigned to incorporate Problem Based Learning (PBL) in addition to the existing Lecture. Thus far, the new approach has been received positively by the students based on student's feedback from past years. Therefore, the main objectives of this project were first to determine whether PBL was really successful by considering what student has learned, if they really improved and what tutors think about the student's improvements, secondly the key factors for a successful PBL-based course and to monitor the influence of group dynamics originating in varying degrees of student activity. The observations are used to gather data concerning initial research questions. One aspect is how work and participation are distributed among the students in a group. Not all students show engagement in the same way, and the learning outcome can depend on the group composition and a student's role inside the group. The second question can be even though the course received positive feedback from student up to now, did really students improve their knowledge in the same way tutors think which is also closely related to the PBL group regards the way students solve problems and ask for help. This could be related to the group composition and dynamic and also the level of individual participation of each student. During the semester, the contribution of students was measured and recorded by the tutors every week. Also, questionnaires were given to the students after completing seven steps of each PBL session which also means once in two weeks. The collected data and the achieved grade can then be correlated to find out how the work during the PBL phase and the success in the final project are related. The information collected during the first observation phase which is done by tutors will be used to support students if needed. The feedback from the observation and questionnaire can be used to improve what students learn after each PBL session and also the group dynamic during the sessions.