

How-to engage students to go the extra mile with course project

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ABSTRACT

Inductive teaching, problem/project based learning, course projects, small and large classes.

Please indicate clearly the type of contribution you are submitting: hands-on, explore, poster.

Many engineering students in Denmark, opposed to other countries, select a particular education based on what they find interesting (DEA rapport 2013). Course projects try to enhance this motivation with real life problems which they can relate to. Motivation is not only the student's problem, but also a problem for the study programme. Research indicates that failure to connect course content to the real world contributes to students leaving science programmes (Seymour, 2000). Engineering studies are often focused on educating for the industry, so there are plenty of opportunities to address this.

Course projects are one such way, which requires the students to produce a solution to a real world problem. The method employed is also known as problem/project-based learning, and are one way to remind the students of their goal and even motivate students to go an extra mile. Teaching course projects inductively, the setup is to start the course presenting a real-world problem that the students are expected to solve during the course (Prince and Felder, 2007). Afterwards the course material is taught, linking towards this goal. Using the inductive approach, presenting the problem before the students know how to solve it, entices a feeling of progress towards their goal when in the class.

But course projects also have pitfalls to be aware of. Course projects can make the students uninterested in material that does not take them towards their goal. Some students will express displeasure about the time required to solve the projects and conflicts in the team might occur. If the setup allows, some students might also try to split the work so strictly that each will only learn the fraction of the course material necessary to complete their part of the project. How to possibly avoid these pitfalls is one of the topics of the workshop.

Student feedback is generally positive, where some students dislike how open the projects can be. On the other hand in some course project the students go the extra mile. What makes the difference is one of the topics of the workshop. Students report that a course project has the ability to force them in a good way to apply what they learned and revise it along the way. Many express that the course projects were what really made them understand the curriculum. Also, one doesn't have to answer the question: "What is it for?" quite as often.

In this workshop the authors will each present their set-ups for course projects and experiences from working with problem/project based learning. The results of the method can be evaluated using student feedback and examples of learning outcome will also be presented at the workshop. Afterwards we will split the workshop into three groups and share knowledge using a jigsaw method (jigsaw.org, 2016).

REFERENCES

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