STUDENTS' AND TEACHERS' PERSPECTIVES ON GRADED PRE-CLASS ASSIGNMENTS IN THE AGE OF ARTIFICIAL INTELLIGENCE

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The Applied Physics bachelor's programme at The Hague University of Applied Sciences is increasingly using a flipped classroom approach for its theoretical courses. For successful implementation of this model, students prepare for class by completing pre-assigned activities to familiarize themselves with the course subject. This is typically done by watching videos, reading texts or taking quizzes. Classroom time can be used to do either collaborative exercises, have discussions or in-depth lectures. In this way the interaction with the lecturer is maximized [1].

A few years ago, we began assigning short textbook readings as pre-class work for our students. To encourage the student to do this pre-class work, we introduced a bonus grade system: students could earn up to a 1.0-point bonus. This bonus is added to their exam work (graded from 1.0 to 10.0, with 10.0 the maximum score). The bonus was awarded for answering a set of simple multiple-choice questions and calculations based on the textbook reading. The final question was open-ended, asking students to identify any difficulties they encountered in the textbook. This feedback allowed teachers to optimize their lectures by addressing the most mentioned difficulties.

With the rise and widespread use of AI, we observed that a substantial part of our students achieved higher scores for these pre-class homework questions while spending less time on them. As a result, the system lost its effectiveness as learning tool for part of the students and real preparation did not take place. To address this drop in effectiveness, we modified our approach for motivating students to complete pre-class work.

To help students stay on track, we implemented several different bonus grade systems across different courses. Among these approaches were voluntary small weekly bonus quizzes after each lecture, short 20-minute multiple choice tests every three weeks and in-lecture grading using interactive tools like wooclap [2]. Each bonus method was used in a specific course, either 2nd or 4th year, with varying numbers of participants. The courses involved are among others: Optics, Laser Physics, Spectroscopy, Medical Imaging and Research II. We will present the observed outcomes of these methods, combining insights from teacher observations as well as feedback from students from surveys and discussions.

[1] G. Akçayır, M. Akçayır (2018). The flipped classroom: A review of its advantages and challenges. Computers and Education, 126, 334–345. https://doi.org/10.1016/j.compedu.2018.07.021
[2] https://www.wooclap.com