

Personalized teaching and learning: an algorithm for AI-enabled feedback for students and lecturers

At the University of Groningen (UG) the use of active learning approaches (assignments, digital exams, annotation tasks in Perusall) have increased. This increases the amount of digital texts that students submit. Feedback on these texts is vital to learning. Data has been collected using three sources of feedback: Perusall, digital exams, and the Short Answer Method (SAM). This data contains open text comments and annotations of students, as well as an assessment of quality, either via an AI algorithm or grades awarded by lecturers. Through the analysis of data derived from these three projects, we will develop an algorithm that provides a quality score for open-ended texts. Artificial Intelligence (AI) enabled feedback based on text-mining assigns scores to students' written texts based on the cognitive levels of Bloom's Taxonomy. With this algorithm many applications are possible. For example, a student can get feedback during the writing for a course assignment: What is the level of what I am writing now? This means a student can directly judge whether or not it is as required for the course. When giving feedback, lecturers can choose and select what part of the text to give feedback on. Does the student writing only give facts? Does the student give a judgement (Bloom's evaluation level), but facts are missing? Other applications can be feeding a book chapter into the system and generate exam questions on a specific level. A lecturer can then select and change questions, and does not need to generate questions from scratch.