

Continuous assessment – Time and effort well spent for students and teachers?

HANS HAVTUN, VIGGO KANN, NINNI CARLSUND, LASSE WINGÅRD

Hypothesis

Success rate in courses is increased using other assessment methods than final assessment.

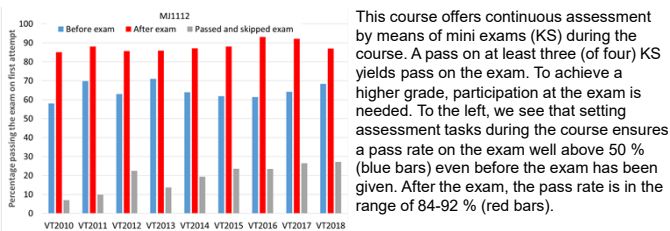
Definition of assessment methods in courses

A **continuous** assessment course arrange assessment tasks during the course, which – if passed – yield a pass on the course *without the student taking part in a final assessment* concluding the course.

A **hybrid** assessment course sets assessment tasks during the course that *contributes to the score of the final assessment* concluding the course (or to the final grade in the course).

A **final** assessment course has *only one assessment which concludes the course*.

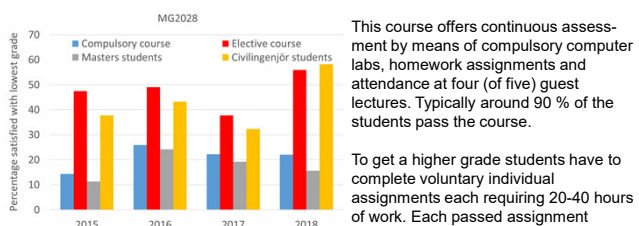
Examples



Another interesting observation is the increasing share of students that, once they have passed the course, skips the exam entirely (gray bars). In course questionnaires, students claim that they want to focus on other, parallel, courses, as an explanation.

When students were asked about the best aspect of the course, over 43 % of the answers highlighted the continuous assessment. By far the most frequent of the replies given.

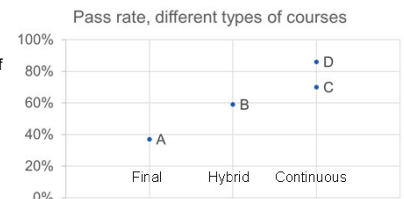
The teacher in charge/examiner estimates that the continuous assessment takes up about 22% of the total teacher time and about 17 % of the direct costs of the course. However, the workload of grading the final assessment (and associated costs) is lowered.



The conclusion we draw from this diagram is that students taking the course as an elective course are doing the voluntary assignments to a much less extent than students taking it as a compulsory course. Likewise, students of the 5 year engineering programs (Civilingenjör) tend to do it less than students admitted directly to a Masters program. From experience, we know that Civilingenjör students are less driven by a desire or need for a higher grade, whereas for the Masters students, the grade tends to be more important for their future careers.

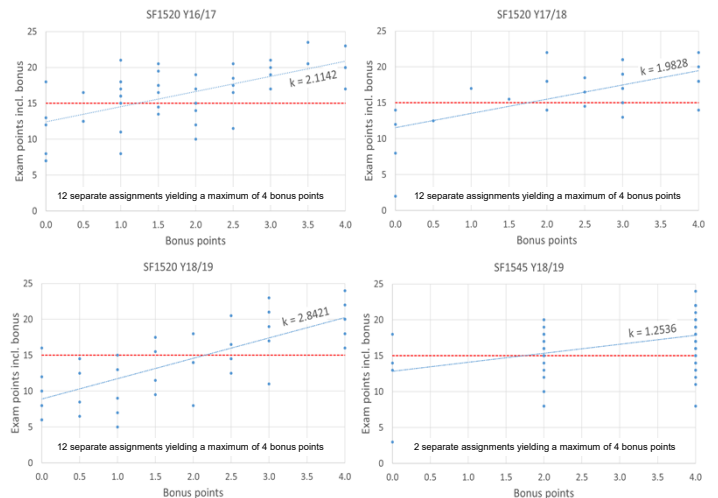
The conclusion we draw from this diagram is that students taking the course as an elective course are doing the voluntary assignments to a much less extent than students taking it as a compulsory course. Likewise, students of the 5 year engineering programs (Civilingenjör) tend to do it less than students admitted directly to a Masters program. From experience, we know that Civilingenjör students are less driven by a desire or need for a higher grade, whereas for the Masters students, the grade tends to be more important for their future careers.

A comparison of the pass rate in February for the courses given in the fall semester 2018 of the third year of the 5 year computer science and engineering programme. The courses have different types of assessment, see the student comments below.



"Many courses at KTH have a structure that directly counteracts progression. As an example, C continuously had rewards through bonus points to the exam, for those who submit labs in time and perform theory assignments. B had a quiz every two weeks and if you passed all three quizzes you passed the course. Both of these courses thus rewarded students keeping up with the course from start to finish, which I did as a result. However, A did not have any bonus or obligatory assessment during the course, you had to find the motivation to keep up with and perform exercises. Although it is entirely my own fault that I did not keep up with A, it becomes quite clear that this structure made me procrastinate, while in the other two courses I was keeping up from the beginning."

"By having a clear structure for deadlines regarding incentives in the form of points on the exam, the course C motivates the students to continuously process the information in the course, while the course structure has an opposite effect in the course A, where the lack of deadlines and a remote date for the exam contribute to procrastination. I believe that future course offerings of A can benefit from, for example, making the labs compulsory for counteracting procrastination by making it easier for the students to start (and continue) working with the material."



The above four diagrams (for two courses employing hybrid assessment) shows exam results as a function of earned bonus points during the course. As can be seen, earning bonus points during the course increase the likelihood of passing the exam (dotted red line). A least square linear curve fit shows the "value" of the bonus points (the k-value) which, for the course SF1520, is between 2.0 and 2.8 exam points/bonus point, and for the course SF1545 is 1.25 exam points/bonus point. Since $k > 1$, doing bonus assignments yields more exam points. One difference between the two courses above is the number of assignments needed to be passed for full bonus points. The diagrams show, that a low number of assignments during the course makes a lower impact on the exam.

However, too many assignments during a semester may lead to overburdening of the students. The students taking the SF1520 during 2018/2019 were affected by other, parallel courses, that had introduced hybrid assessment.

Conclusions

- Continuous assessment increases throughput of students in courses and programmes.
- The possibility of being passed on a course prior to its final assessment is appreciated by the students. Over the years, there is an increasing trend of not participating in the final assessment once a passing grade been achieved.
- The workload for the teacher during the course with continuous assessment is higher, but is probably compensated by a lowered workload towards the end of the course, and a reduced number of re-exams to grade.
- Contrary to what we expected, our data show that students taking an elective course are doing voluntary assignments to a much less extent than students taking a compulsory course.
- Our data show that courses using only final assessment placed in parallel with courses using continuous assessment have a much lower throughput.
- Earning bonus points in hybrid assessment courses increases success rate in the final exam. Having several, but not too many, bonus assignments increases the impact on the exam.