

Experience from digitalized teaching; “Statistik med medicinsk tillämpning”  
by Catrin Wessman

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### *Background*

As a lector in statistics belonging to Biostatistics, School of Public Health and Community Medicine, I have come to realize there is a need to increase the knowledge of statistical methods in health sciences. The course, “Statistik med medicinsk tillämpning” (7.5 Hp), aims both for students writing their master thesis and former students who already started their working life. I offered the course for the first time in late autumn 2019.

Hence, I wanted to create a course to give students a solid statistical background, and at the same time give the students the possibility to continue their working life or read additional courses / writing their master thesis.

To be able to offer the students that flexibility I decided to have an asynchronously structure. Hence, I recorded my lectures and created quizzes (to test their understanding of the lectures).

Though as for instance, Hrastinski (2007) describes, research stating that asynchronous communication might give the students more flexibility and perhaps more time for reflection but there is also an obvious risk in losing positive effects of learner-to-learner interactions and the retention rate is often low.

Therefore I wanted some teaching control of the progress to be able to spot and motivate those students who encounter difficulties. Hence, I offered non-mandatory lectures, where we met physically. During those lectures the students were supposed to come with prepared calculations and the idea was we could discuss the problems together. In reality, the students ended up using these hours to calculating (supervised by me, ready to help if they encounter difficulties). In addition to that, I gave three mandatory computer sessions and a mandatory workshop. The aim was two-folded, first to create teacher-to-learner meetings (so I could recognize which students who needed some extra attention), and second to encourage student’s collaborations. My third objective was to create a need to follow the time line of the course / studies.

Before the course started and as a final preparation, I attended the Conference on Teaching and Learning in Higher Education (HKG 2019) during the autumn of 2019, with the keynote speakers Stefan Hrastinski and Anne Farewell. The main recommendations during the conference was to take a step in time and not do a whole course from scratch (as I was planning to do). The other recommendation was (which I already planned to follow) to add quizzes to the recorded lectures and other tasks to improve the participation.

### *The course set up*

The idea and structure of the course was rather simple and straightforward. I was very concerned to articulate the time-schedule so it clearly appeared when I assumed the different mandatory task should be ready. The idea was that to keep the task mandatory to give the course a synchronous manner (which I think motivated the students to keep the timetable) and in this way mix both asynchronous and synchronous structure. In the same time, I wanted to give the students the possibility to listen at the lectures at their own convenience (the asynchronous set up with recorded lectures). The mandatory tasks was (of course) built on the recorded lectures.

I used Canvas as the communication platform and I divided the different modules into dates, where indicated when I expected them to fulfill each module. Each module consisted of recorded lectures, computer sessions and / or workshops and quizzes. In this way, I mixed both asynchronous and synchronous tasks as well as mandatory and non-mandatory moments, which Hrastinski (2007) recommends.

I also tried to send personalized mail to encourage participation. However, according to Wood (2002), there is no relationship between participation rate and mail from teacher. I can only agree, I did not feel the mails had a measureable impact on the student's motivation.

Chandrasekaran (2016) describes that collaborative learning facilitate learning and the students get a sense of a community, which they find motivating. This is something I think I will need to improve in future courses.

### *The result and the result of the survey*

During the course at least 13 of 20 followed the course (went to the mandatory sessions etc.). In total 10 of 20 student passed the course, whereof seven with distinction. In 2006, the retention rate of Swedish online courses was 59%. Hrastinski (2007) while Juneby (2007), stated the dropout rate to be as high as 70 % at GU distance program

The course survey was answered by 8 of 20 students. Most answers were highly positive to the course and the course set up. The positive comments was the course had a logical structure and that the students felt I was available for their questions. The negative comments was regarding the movies (me stuttering etc). The students also asked for solutions to the calculations and clearer description of which chapters that are essentials.

The movies to a lot of time to prepare, even though I made the film using a professional program (Camatasi). I recorded the lecture, worked with the layout and then listening to make sure all was correct. Still, I am not professional when it comes to layout, and students might have had higher demands on the format. When talking live at a lecture, it is easier to stutter, change the angle etc. without the students noticing. It is more demanding when writing or recording.

When it comes to give solutions, I think it is important not to hand it out too fast. I do not want the students to be focus on the correct answer, but instead testing their ability to *find* the correct answer. The students does not have access to the solutions in real life and this is, after all, an advanced course.

I noticed that most of those who succeeded went the course together with someone they knew from scratch, to whom they could discuss the content. This confirms the importance of learner-to-learner interactions that, for instance, Chandrasekaran (2016) discussed.

Some students, just as described by Hrastinski (2007), used the ability to pause the recording and replay during sections they found difficult. This is something they appreciated compared to a physical lecture in real time.

To some (two or three) students, I had one-to-one sessions, where we discussed different issues. These sessions are of course very time consuming, and would not have been able to conduct in a larger group. Those students took actively contact with me.

### *Contribution to future courses*

There is important to articulate a clear timetable for the students and small, short checks / quizzes are also both appreciated and vital.

My impression was that many students who passed the course, went the course together with a friend and that they benefited from their internal discussions. I might have been better to promote the learner-to-learner interactions to the other students.

To be able to offer and improve future distance learning courses / e-learning courses for all students (not only students with a high degree of own motivation and an ability to autonomously solve problems) it seems important to promote the collaborative tasks. I do think this is a vital issue for all of us, if we are aiming for a university containing students with a diversity in their socioeconomic background.

### *Discussion and conclusions*

Overall, I do think it was a good course, which fulfilled its purpose. Still, there is always room for improvement.

Ways to minimize the dropout and to increase the retention rate as Jungby (2007) recommend is more and more frequent feedback from teacher and to improve and promote communication between students (learner-to-learner objective)

An important experience is to keep both the both asynchronous and synchronous tasks as well as mandatory and non-mandatory moments as recommended by Hrastinski (2007).

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