

3-årig emneevaluering

Emne : Mol213

Semester og år for gjennomført emneevaluering: Høstsemesteret 2022

Navn på emneansvarlig(e): Fergal O'Farrell

Innhold 1. Beskriv og begrunn pedagogiske valg i emnet, reflekter over studentens læring som følge av disse valgene.

Bakgrunn

I took over the course in 2020, inheriting from Anders Fjose. I am grateful to him for the use of his lecture slides upon which I still rely, although to a lesser extent now in 2022. Inspired by corona! and based upon pedagogical teachings, mentioned below, the course was thrown into the digital format. Rather than keeping the transmissive nature of the course I chose to adopt a flipped classroom approach. This has been maintained to this day. When I look back at grades obtained by students with Anders pre 2020, I do not notice a change in distribution of the learning outcomes (grades), this despite what seems to be roughly a doubling in student numbers (28 took the exam in autumn 2022) and a modest increase in student satisfaction, arguing that no decrease in quality is associated to this change in structural/pedagogical technique. In addition to this change, as I currently am active in the lab with a model system focused on within the course, *Drosophila*, I have been motivated to bring the students closer to the lab and research performed there. In one form or another over the last 3 years I have organised lab visits to my, and several other labs, working with model organisms (2020 corona rules applied and this was just in a digital format for my lab and 2-3 others). This aspect has explained to include about 5 to 6 labs in BIO and SARS. I think the students will benefit from this contact with lab environments, seeing the animals first hand and understanding where the theory we discuss both comes from and can end up. While I could develop this further to actual labs during the course the large size of registrants (now 40+ last two years) and little available suitable lab space currently rules this out.

Flipped classroom approach used.

The flipped classroom approach uses prerecorded lectures of high quality (at least high accuracy with low spoken error and robust reproducibility between years) received 1 week in advance of class time. Class time currently (2022) is spent as the students choose, but I ask for feedback on lectures, anonymously in question form the day before and prepare short presentations to help clear up any issues. Followed by open discussion where spontaneous questions are welcomed. Remaining class time is used to either view the next lecture or take the lab tour when that option. The course had 10 double lectures in 2020 and this has been expanded to 12/13 over the last two years. In part the expansion reflects a combination of a dilution of portions, cutting parts, and introduction of new parts that I feel add to the overall scope of the course without largely without adding complexity.

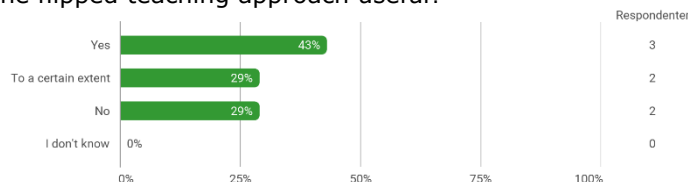
The course has 2-3 **colloquia**, timetable space dependent. I give these myself as currently no PhD students are available. I have had the colloquia moved to latest possible time slots to ensure that course material is covered beforehand. This is a change from pre-2020. The colloquia time is spent on exam relevant questions but very interactive. They only receive questions there, must work as groups discussing answers and must provide answers to class. I correct or complete answers verbally. This is the only way to receive colloquia answers encouraging them to turn up.

Assessment and feedback

All elements of the course are voluntary except the exam. The exam follows the MOL grading system. The exam takes some advantage of the inspera digital resources and is a mix of essay style (with limited word count and very directed questions) and MQC and covers the entire course (this is a change to pre-2020 where the exam covered the first portion of the course dealt with in colloquia). In 2020 a large bank of questions had to be made. This is added to year on year and can be drawn from to make each years exam. Despite these modifications to exam technique grades do not seem to be affected negatively and normal distributions are routinely observed (shown below). Average grade seems to be a high C (approx. 70% more see details below). In my opinion the current exam tests the whole course content and in general students (2021 and 22) seem satisfied, although in 2020 corona home exam was criticized for size. The large exam size was to combat home exam use of internet and succeeded to some extent as normal distribution of grades was achieved (compare 20, 21 and 22 distributions below). None the less, some **feedback** from the students was useful in shaping subsequent exams. **Student feedback** on the course book in 2020 was assessed and the feedback was positive in that they felt it complemented the lectures well and was distinct enough in approach to warrant reading. For this reason change was not considered. Feedback on student understanding majorly comes through the use of online forms and discussions in class. Still in 2022, maybe more than ever, student engagement drops over time and I feel they do not keep up to date with material which interferes with learning. They could benefit a lot from just keeping up. I warn them in the beginning and try discourage slackers from taking the course. This course comes nowhere near the 270 hours (including self-study) that a 10 point course should have, but is difficult because of the level of molecular detail.

The students were polled on the usefulness of flipped classroom approach in the official feedback of 2022 and the majority found it useful.

Did you find the flipped teaching approach useful?



Further reflection on student learning comes in later sections on feedback and assessment/pass rates.

Conclusion

I like the course in terms of content and the students that choose to interact. The flipped classroom discussions can be energizing. Sometimes the discussions and A-ha moments with these students is very rewarding. Being more familiar with the material as time passes, I continue to both cut and add segments to improve the course.

2. Oppfølging av tidligere evalueringer

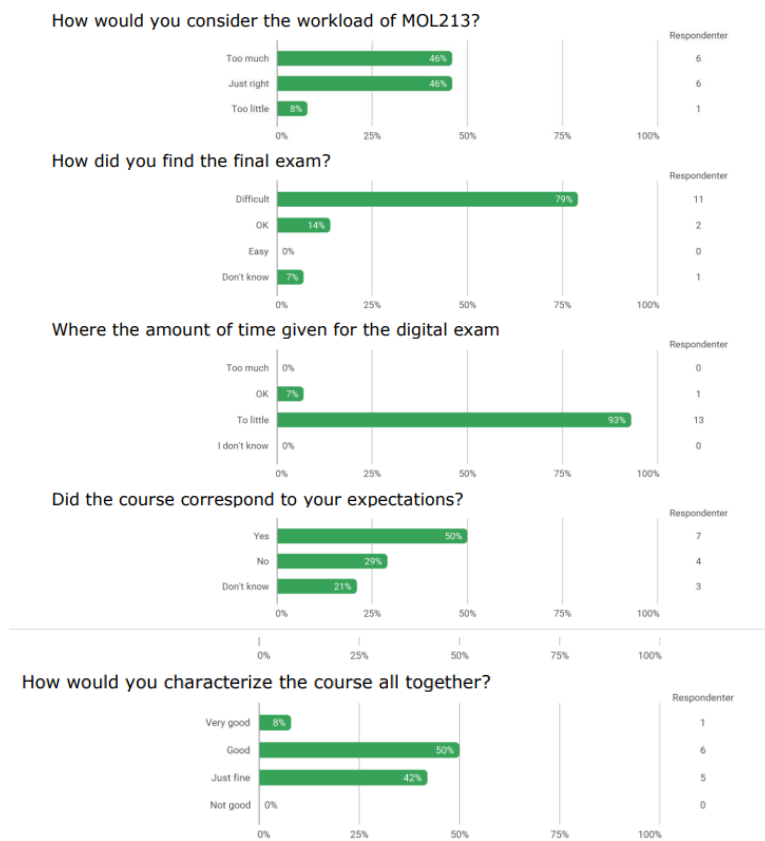
Feedback both in class and final student feedback report is taken into account and adjustments are made both short term and long term where a good logic is presented. For example, year on year the exam has become shorter and most students now use 2 ½ hours to complete the exam. Next section includes some feedback and tracks progress year to year.

3. Studentevaluering og andre evalueringer som er relevante for emnet

In addition to the official student feedback distributed and collected by the studie admin I include short questionnaire at the end of exam to ask their impression of exam fairness and the amount of time it took them individually as well as leave a space for comments. This helps me track exam size suitability and student impressions of question and overall fairness. These comments have been helpful in noting and changing/removing unclear questions. Often feedback from students both here and in the official form are positive, apart from 2020 when the almost everyone agreed the exam was too large.

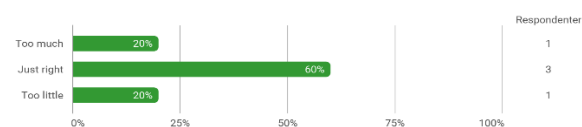
There follows a brief summary of official student feedback to key questions, comparing progress year on year.

Official feedback 2020



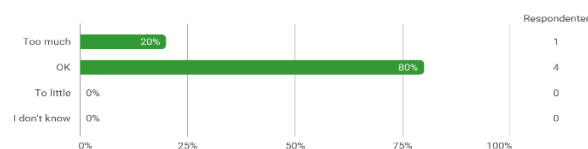
Official feedback 2021

Workload



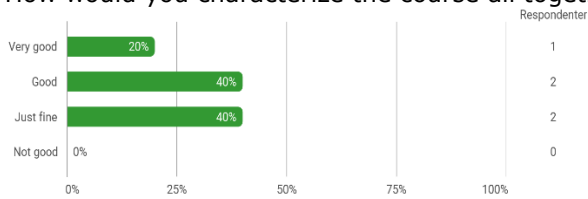
Comment: Improved balance compared to 2020

Were the amount of time given for the digital exam...



Comment: Dramatic improvement from 2020.

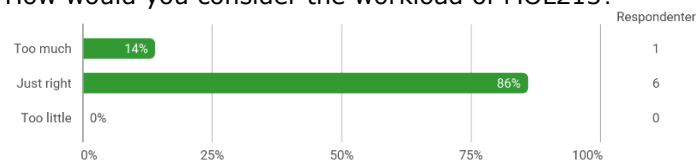
How would you characterize the course all together?



Comment: 15% improvement in Very good category.

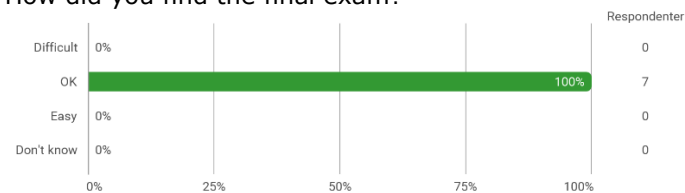
Official feedback 2022

How would you consider the workload of MOL213?



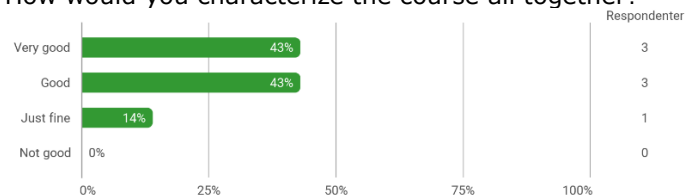
Comment: Dramatic improvement compared to 2020 and 21. Some dissatisfaction remains.

How did you find the final exam?



Comment: Dramatic improvement (80%) compared to 2020.

How would you characterize the course all together?



Comment: 35% improvement in the Very good category compared to 2020.

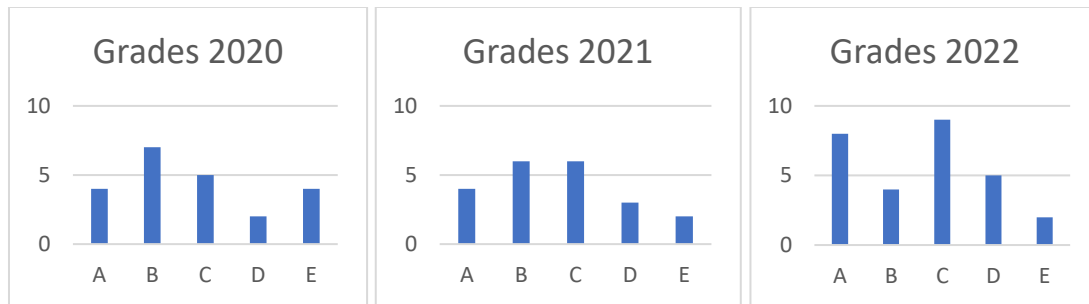
These improved satisfaction scores represent the result of action taken based upon student feedback.

4. Erfaringer fra andre som bidrar i undervisningen på emnet, både studenter og ansatte

I have invited guest lecturers from SARS, Patrick Steinmetz (1 or 2 double lectures), Marios Chatzigeorgiou (1 double lecture 2020) and Pavel Burkhardt (1 lecture 2020) and Post docs from BIO, Alexis Lanza (1 lecture 2021) and Katharina Stracke (1 double lecture 2022). These lecturers also have been engaged in giving lab tours. I think they have had a positive experience teaching the course and the students /that took the opportunity for lab visits) have been very positive about lab visits and seeing the organisms we work with. I would say these were the most engaged students and in total maybe 20 visited the fly lab in 2022. This informal setting let the students ask all kinds of questions and was positive in my mind. The other lecturers also enjoyed this level of interaction and the approach of the flipped teaching overall.

5. Strykprosenten på emnet

No students have failed the course in my time. Also complaints “klaging”, asking second graders to grade the exam, is quite low, with none in either 2020 or 21, and 1 in 22 (to the best of my knowledge). The number that take the re-exam “tidlig eksamen” are also quite low and I believe 2020 had no re-exam requests. 2021 had 2 and 2022 is not finalized at time of writing. Grades were quite exceptional in 2022 with 8 A’s and a class average of 71% giving a less normal distribution, possibly explainable by a large number of master students taking the course (expected to fare better), but I do not have access to these numbers. Distributions year on year given below.



6. Eventuell fagfellevurdering

Ingen slik vurdering er gjort

7. Vurdering av samsvar mellom emnets læringsutbyttebeskrivelse og undervisnings-, lærings- og vurderingsformer

Læringsutbyttebeskrivelse er reflektert i undervisningen gjennom forelesninger og kollokvier samt arbeid og presentasjon av semesteroppgaven. Eksamen inneholdt spørsmål fra store deler av det som er definert som pensum.

8. Vurdering av om framdrift og opplegg for emnet er i samsvar med de fastsatte målene for emne og program

In general, as shown by both increasing student numbers and satisfaction while upholding grades and class average, the course is going in a good direction. The course has become more diverse in subject matter since I have taken over and while some of the complexity is kept, in other areas a wider scope has been the focus, to broaden student knowledge rather than repeatedly going deep in a restricted numbers of cases. Note, examples of complexity are kept in certain areas (and knowledge here tested in exam), so we have this too. A course goal is to reach as many students as possible with less intense more varied content that may stimulate their interest in developmental biology. The total number of lectures has increased as a result, with broader lectures given by guest lecturers. Since 2020 the course tries to bring students into the lab via the lab tours and show how we use the knowledge they are learning and where and how that knowledge has been generated. Again, going broad, many distinct lab visits, rather than deep, as with a lab course. I feel this is appreciated by the engaged students interested in science. Based on anonymous feedback from a student in their exam in 2022 this approach, coupled with flipped classrooms, has been relatively received well

“The option to directly comment on an exam, and explain my doubts about questions in a comment box is a great thing, and makes my wish my home university exams had one more often! I thought the time was plentyful. As an exchange student, I slacked in the first two months, and used the recent weeks to catch up. At least for as much as I could. It's been truly mindblowing and wonderful diving into developmental biology, genuinely. Wish I started paying attention from the start! It made me realize this is something I might want to pursue further.”

9. I de tilfellene det er tilknyttet praksis eller arbeidsrelevans i emnet, skal det evalueres om ordningen fungerer tilfredsstillende.

Ikke relevant for MOL213.