DM1595

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1. Description of the course evaluation process

During the first lecture of the course, I asked students to name two course representatives, and reminded them in the next two weeks. As they did not come up with a suggestion, I randomly selected two students and proposed them to take the role, and they accepted. They collected feedback from their own experience and other students' perspectives through informal channels. The three of us had a remote meeting where we talked about it in depth. I compiled and sent this feedback to the five module teachers so that they could address some of it during this course's instance, when possible. I also presented a summary of this process in the länkmöte, where the head of the student board also presented the comments they received on their end.

Each student also had the opportunity of filling in the anonymous course evaluation. I reminded them about these different channels via announcements and with the help of the module teachers. The course representatives' feedback was also followed up via email with one of the module teachers, who was further improving their module during the course. The course evaluations were filled in by around 16% of the students (10/62). Students did not make specific comments on gender or disabilities in their evaluations.

Once the course evaluations were closed, I held a Course Analysis Meeting with one other course responsible to discuss the results and analyse what needs to be improved for the next course round. In this document, I report on input from three sources: the meeting with course representatives, the comments reported by the study board representative in the länkmöte, and the course evaluations.

2. Description of meetings with students

Due to the covid 19 pandemic, meetings face to face were restricted, thus feedback was collected via the methods described in point 1.

3. Course design

The course gives an introduction to skills and tools for building interactive media technology applications, including relevant methods, platforms, languages, and models. It is structured in 5 independent modules: Object-oriented programming, functional programming, relational databases, sound computing, and game development. Each of the modules lasts 1 to 2 weeks and has a different teacher with their group of undergraduate teaching assistants (TAs). The course has continuous examination, since each week students can turn in labs and get them assessed soon. To pass the course with an E, they have to pass the 7 the mandatory assignments. If they want a higher grade, they can choose to turn in also the so-called bonus labs, which are other 7. We also grant them a time bonus if they turn the mandatory labs in time and in good enough shape (which allows them to get an A by finishing 6 bonus labs instead of 7).

The first lecture, given by me, introduces the students to the course intended-learning outcomes (ILOs), structure, examination criteria, and other practical information, and the teachers introduce themselves and their modules. Each week starts with a lecture by the module teacher, often with preparation required on the side of the students. This year, this preparation was structured in the OLI format, leveraging on question-based learning, for three of the five modules. Each week, the teachers and/or TAs are available for lab assistance on demand during tutorial sessions (typically 3 per week, but this year 2 extra sessions were added in the functional

programming module). Students can work in pairs or alone, and they can change lab partners in each assignment if they want to. At the end of the course, two sessions are offered to catch up with remaining assignments. Attendance is not mandatory to any course event, and students can choose when to present their assignments in front of a TA. This course round, all course activities were run online. Students can also get support via the discussion forum or by contacting the teachers, TAs, or course responsible via Canvas or email.

Regarding the constructive alignment, each of the class meetings and lab assignments contribute to one or more intended learning outcomes (ILOs). The students receive continuous formative feedback when they submit each lab until they get a "pass".

It is important to note that this is the second time that the course was run, and with a new course responsible. Last year, course evaluations and course analysis were not conducted, so the teachers and the course responsible did not count with feedback from last year's students to further develop the course. Still, three out of the five modules were transformed into OLI-compatible, and all assignments were revised and improved for better readability and level of detail. The Canvas structure was iterated upon, and a Course memo was created and published.

4. Students' workload

Each week, the course has 2 scheduled hours of lecture (with varying lengths of preparation time, not included in these 2), and 6 hours of lab sessions where the students are expected to work on their assignments and occasionally connect with teachers for assistance if needed (one of the modules had 10 hours instead of 6). Students can work at their own pace the rest of the time. The last two weeks of the period are reserved for students to catch up with assignments, without scheduled activities.

From those who filled in the course evaluations (10/62), most students (9/10) spent less time than expected (as a 7.5 credit course should take around 20 hours a week). Regarding the distribution of the workload, one student said it was similar from week to week, while four students said some modules are more time consuming than others, which we knew in advance (and we highlighted this at the beginning of the course, recommending students to take advantage of this fact, given that most courses' workload get heavier towards the end).

5. Students' results on the course

All the students who followed the course and submitted their work have successfully passed it (59/62). Only 3 students did not submit the assignments as of now, and therefore did not get a grade yet. Among the students with a grade, 29 got an A, 29 got a grade between B and D, and 1 got an E.

6. Students' answers to open questions

Course evaluation respondents valued the "hands on" aspect of the course and its structure, the fact that it introduces them to several relevant technologies/languages/platforms that will be useful both in their future master's in interactive media, and at work. Several highlighted that it was "fun" and allowed them to learn "so much" in a short time. Two emphasised the contribution of the OLI format. Finally, one respondent also mentioned that all the teaching assistants had been helpful, and two respondents declared that it was one of their favourite courses at KTH so far.

Regarding feedback to improve the course, one respondent wished there was more cohesion between course modules, which is something that will be discussed with the teachers for the next course instance. Some students suggested having a later deadline for bonus labs that doesn't coincide with the last module's deadline. This is something we addressed during the course by postponing the latter, but we will arrange it differently from the beginning of next year's instance. In any case, we also allowed students to continue iterating on all the assignments that they haven't passed so far, until the last day of the period, before conducting the final grading. According by the students' representatives, one student seemed not to be satisfied with the answers provided by some teaching assistants. I addressed this during the course by asking teachers to talk with their TAs about ways of dealing with feedback and corrections. I also plan to further address this next year by providing training on feedback techniques. Finally, one student wrote detailed suggestions for making all the labs more challenging. For this to be considered, it should be first contrasted with the teachers' perspectives regarding the ILOs, as well as the rest of the respondents' perceptions, most of which (9/10) found the course to be challenging in a stimulating way already.

7. Summary of students' opinions

All course evaluation respondents (10/62) reported having worked with interesting issues to a certain extent, and most experienced the course as challenging in a stimulating way (yet, two reported being neutral in front of this assertion). Almost all felt they were able to practice and get feedback without being graded, but in any case, all respondents declared that the assessment was fair and honest. All respondents felt they were able to learn by collaborating and discussing with others to some extent. All respondents except one said they were able to get support if they needed it, and one highlighted that all the teachers answered very well to all questions.

During the meeting with the course representatives, the feedback received indicates that the students appreciate the course, find it "fun and interesting", and think the skills they learnt will be useful when they get a job. They also reported that the students particularly appreciated the OLI format used by some modules. This all matches the results from the course evaluations. The representatives also mentioned finding some readability problems in one of OLI modules, which had new content written in Swedish. We already took care of this by improving the material. The module teacher has been in contact with the representatives to get more detail about the matter.

During the länkmöte, the head of the study board declared that most of the feedback they received was positive, and that some students found one of the modules to be less relevant than the rest (something that is not present in the course evaluations). This experience does not seem to be prevalent in the group of students and some course evaluation respondents highlight that particular module as one of the best parts of the course. In any case, I plan to discuss this matter with the module teachers before next year's round, basing the analysis on ILOs rather than on personal perceptions. The other piece of concrete feedback received at the meeting was that some students considered the course content to be not as focused as that of other courses. This course is, by design, an introduction to a variety of useful techniques and concepts, so it cannot possibly cover them all in depth; it is instead the basis for later specialisation. Still, and as mentioned above, this will be discussed with the teachers.

In summary, the three sources of input show a positive outcome, with students appreciating the course, and providing constructive feedback that will indeed improve it for the next round.

8. Overall impression

My overall impression is that this course offering was very well received, accounting for the students' feedback from different channels, and including direct messages that I received along the course, with students telling me that they were enjoying it. The module teachers are satisfied with how their modules went, and in particular with the students' experience with the OLI

format, and given how many students decided to do the bonus labs and even to turn them in well in advance of the deadlines. The values in the LEQ questionnaire look high on their own, but unfortunately it is not possible to compare them with that of last year, because we have no previous data.

9. Analysis

In the course analysis meeting it became clear that there are specific strong areas in the learning environment created by this course: The hands on nature of the course and its applicability in industry and university studies; the variety of contents that it introduces; the format in which these contents are delivered; the teaching staff's skills and the wide availability of support (from teaching assistants, teachers and course responsible, via different means - Canvas messages and forum, email, Zoom-, both synchronous and asynchronous), and the flexibility regarding deadlines and group work (e.g. the risk of choosing a lab partner is low, since they can change groups or work alone from one assignment to the other); and the importance given to student feedback. All these factors contributed to a positive outcome in terms of grades, feedback, and general atmosphere.

Regarding the weaker areas of the learning environment, one possible point of discussion is the cohesion across modules. Although this was *not* a problem for the students and did *not* hinder the learning conditions, it could nevertheless be interesting to explore ways of further integrating the learned contents. For example, the ILO on *choosing the most suitable technical platform to create user interfaces for a new interactive system* could be strengthened through the inclusion of a small project assignment towards the end of the course, in which students have to choose on their own a combination of suitable platforms and techniques among the ones they have been exposed to, in order to address a certain technical brief. Another action point could be continuing to improve the teaching environment. For example, a meeting could be held before the beginning of the course for the teachers to touch base on the updates they performed to the materials, but most importantly to discuss their teaching styles, attitudes and beliefs, and share insights from the previous course round. In other words, building and cultivating a teaching *team* could enhance the cohesion of the course as a whole, and not just in terms of contents.

Finally, when trying to look at differences across types of students, some comparisons are not applicable, since all students belong to the Swedish education system and are taking the same year of the programme. In addition, it is not possible to analyse survey data regarding disabilities because that the LEQ questionaire requires at least 3 answers per group to display the responses in the graphs. In any case, the compensatory support (attributed to students via Funka) was taken into account by the course responsible/examiner. One variable that affords –and requires— analysis is gender: The numerical answers from respondents who identify as women are, in 5 questions, *higher* than the answers of respondents who identify as men, and in 1 question, they are the same (a question where all respondents strongly agreed with the assessment on the course being fair an honest). The reasons why women respondents agreed more with the given statements should be further investigated as they cannot be clearly attributed to any factor in the learning environment. It would be interesting to discuss this with students the next round. If implemented, this would imply coordinated efforts with other courses in order to sensitise both students and teachers about gender (more broadly diversity) aspects of teaching and learning.

10. Prioritized course development

As in every course, and especially in a course only run twice and with only one round of course evaluations, there is room for improvement. With this in mind, I have planned the following course development activities for next round:

- We will discuss with the module teachers how to provide more cohesion to the course, and we will implement the needed changes.
- We will develop material on feedback techniques and provide training for undergraduate TAs before the course starts (however, this should be a coordinated effort at the programme level, not just in this course).
- We will set the deadlines for bonus labs at a later date than the last module's mandatory lab.
- We will aim at having all the material published on Canvas by the beginning of the course, if this is compatible with the module teachers' schedules.

Aspects regarding gender differences in students' experiences should be further investigated in a more global way, looking at programmes and not just individual courses.