



Report - HN2023 - 2020-04-07

Respondents: 1
Answer Count: 1
Answer Frequency: 100.00%

Please note that there is only one respondent to this form: the person that performs the course analysis.

Course analysis carried out by (name, e-mail):

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DESCRIPTION OF THE COURSE EVALUATION PROCESS

Describe the course evaluation process. Describe how all students have been given the possibility to give their opinions on the course. Describe how aspects regarding gender, and disabled students are investigated.

The course evaluation process was continuous throughout the course, using:

- Three Surveys (anonymously) at the beginning and in the middle of the course and, on the final seminar day the course, carried out in the classroom, focussing on the students goals, expectations, ambition, learning, collaboration, as well as on what was challenging and what was valuable.
- 9 Short Reflective Written Assignments (anonymously), one at the end of each course day focussing on learning and collaboration,
- Two Individual Assignments via CANVAS: at midterm and at the end of the course, focusing on discussing and reflecting on different themes related to the course.
- One-to-one interviews with the students around halfway through the course
- Discussions with the students and the project groups continuously during the course
- KTH LEQs Course Evaluation Questionnaire on the final seminar day

Each of these activities included reflections of the collaboration and team work in the course. The students were thus not only given the possibility to give their opinions, but required to do so (in the individual CANVAS assignments). The course design and its learning activities, e.g. seminars and workshops, as well as the evaluation process also included themes on diversity regarding cultural and educational background as well as abilities, special needs and gender perspectives. The examiner, in consultation with the KTH Disability Coordinator (Funka), in this course, as well as in other courses this examiner leads, decided on any adapted examination for students with documented permanent impairment. One option was to grant another examination form for re-examination of single students. In addition, an optional feedback meeting after the course ended was offered. This, to discuss the course and the project between the students in each group and the teachers.

DESCRIPTION OF MEETINGS WITH STUDENTS

Describe which meetings that has been arranged with students during the course and after its completion. (The outcomes of these meetings should be reported under 7, below.)

- Discussions with the students and the project groups continuously during the course.
 - One-to-one interviews with the students around halfway through the course.
 - In addition, an optional feedback meeting after the course ended was offered.
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COURSE DESIGN

Briefly describe the course design (learning activities, examinations) and any changes that have been implemented since the last course offering.

The course design included that students at two Universities, KTH in Sweden and Botho University in Botswana, followed the course in real time. Zoom and other Information and Communication Technologies were used to enable this. The design included lectures, workshops, seminars, laboratory work, supervision, reflections and other assignments, and an applied project. This course design was chosen to provide theoretical knowledge and experience-based knowledge and skills on solving challenge based problems with focus on the United Nations Sustainable Development Goals (UN SDGs) and ergonomics in product development. Topics included:

- The sustainability concept, SDGs, and challenge-driven development
- Physical, system, and cognitive ergonomics, the HTO-perspective, Injury risks and their effects, and risk management,
- Design Thinking and Ergonomics methods
- Creativity, group dynamics, collaboration, project management, and evaluation methods

The course was designed with nine teacher-led course days "in class", approximately every second Thursday and scheduled "project work" days where the students could work on their projects, using ICT for communication and collaboration at both campuses. These were scheduled to most of the other Thursdays. The autumn 2019 was the first time the course was given. The course design also included deliverables and assignments such as presentation of the progress of the project, project diaries (approximately one each) and reflective assignments (see above).

THE STUDENTS' WORKLOAD

Does the students' workload correspond to the expected level (40 hours/1.5 credits)? If there is a significant deviation from the expected, what can be the reason?

Calculating the average time the KTH students stated that they worked on the course per week was 18-20 hours, which is considered as high for a 7.5 credit course that runs the whole autumn term. One main reason is the extra effort several students (mainly those at KTH) put in to the project work, to make the collaboration work, as well as to reach the project objectives, given that there were issues – and learning opportunities - in the collaboration between the students at the two campuses. These were, as I perceive it, partly due to differences in educational background, in experiences, technical and other resources, attitudes, as well as the levels of ambition with and motifs to take the course between the students at the two campuses.

THE STUDENTS' RESULTS

How well have the students succeeded on the course? If there are significant differences compared to previous course offerings, what can be the reason?

The autumn 2019 was the first time the course was given.

All eight students studying at KTH who followed the whole course (both the students in the KTH Technology, Work and Health Master Programme, as well as the exchange students from Botho, studying at KTH) passed the Project (PRO1, 3 credits) with the highest grade "A" and passed the Exercises (ÖVN1, 1.5 credits) with the grade "Pass". Six out of these eight students passed the Examination (TEN1, 3 credits) with grades varying between "A" and "C". One student did not pass the TEN1 (grade "F") and one student did not participate at the TEN1 in January 2020. Thus, 6 out of 8 students at KTH had passed the whole course after the first examinations.

All seven students studying at Botho campus who followed the whole course passed the ÖVN1 with the grade "Pass". Two of these students passed the TEN1 with the grade "E", one student did not pass the TEN1 (grade "F") while the remaining four students did not write the TEN 1 in January 2020. The TEN 1 was optional for these students, who were not registered as KTH students. Only one of the Botho campus students fulfilled the requirements to pass the PRO1. IN summary, 1 out of 7 of the Botho campus students had passed the whole course after the first examinations.



STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

As course leader I perceive the feedback from the different feedback activities in the course indicating that the students found the course interesting, that they learned a lot, e.g. by practically working with a real societal challenge in an applied project, e.g. engaging with real stakeholders and from the team work in multicultural project groups with students from two continents. They also gave feedback that they found the network connection, which sometimes was lost or of poor quality during the learning activities being a challenge, as was, at least at times, the interactions with students from "the other university" (both ways). The latter, was, however, also perceived as a large learning experience.

The answers from the open general questions in the LEQ, filled in by the students at the KTH Campus, indicated that the best aspects of the course were the topic and the course design - e.g. "That it was a real life project."; "The course was appealing and it really addresses the societal challenges that community faces."; "The design thinking mindset and the process of product development are interesting. It is also a good opportunity to know more about African culture." The answers on what they suggest to improve mainly deals with "Improve IT challenges" and "Team work can be better". Advice to future course participants included "To be prepared for hard work but you learn a lot by participating in the course."; "Be prepared to handle a real societal open-ended challenge" and "- try to turn challenges into learning opportunities".

The specific open questions included comments on e.g. the workload, which was perceived from as being "quite OK" to "more time than 25 % per week". Other open questions led to answers such as: "having this diversity of people and having to experience different cultures it was quite challenging by on the other hand interesting to learn how different people do things and interact"; "by having to do reflections every course day it enabled me to fully understand and engage and ask where I did not understand"; and "I learnt how to interact, how to present and how to ask where necessary".

SUMMARY OF STUDENTS' OPINIONS

Summarize the outcome of the questionnaire, as well as opinions emerging at meetings with students.

As already mentioned above, I, as course leader, perceive that the students found the course interesting, that they learned a lot and appreciated having taken the course. In addition, they experienced some challenges mainly regarding ITC and collaboration with students at the other university.

OVERALL IMPRESSION

Summarize the teachers' overall impressions of the course offering in relation to students' results and their evaluation of the course, as well as in relation to the changes implemented since last course offering.

This was the first time we offered a challenge driven course in ergonomics with open ended real societal challenges, and with the course given simultaneously at two universities with students from two continents working together in the same projects, to a large extent in real time by using different ICT. Given the challenges emerging in the course, including IT-connections and educational and cultural differences which impacted the group work, that the students had to engage in collaboration with real stakeholders in the project, and that many students did not have any experience of product development nor such from engineering or ergonomics perspectives from their previous education, I am really impressed by their results in the course! The LEQ evaluation, as well as the other ways of getting the students feedback has given me the impression that it was a challenging, but "good" – interesting, usable course where the students acquired several of the UNESCO-defined key competences needed for contribution to the sustainable development goals.

ANALYSIS

Is it possible to identify stronger and weaker areas in the learning environment based on the information you have gathered during the evaluation and analysis process? What can the reason for these be? Are there significant difference in experience between:

- students identifying as female and male?
- international and national students?
- students with or without disabilities?

As I see it, there was a large difference in the learning environment at the two campuses, to a large extent depending on the two universities differences regarding teaching and learning traditions and cultures, but also cultural differences, including on expectations and what is required from students. From the interviews with the students, both at the KTH campus and at the Botho campus (conducted by me and a fellow teacher/researcher) it emerged that there was, generally, a large difference between the motifs and objectives for taking the course, as well as regarding the view on collaboration in team work, and how to relate to deadlines for course assignments etc., between the student groups studying at the two campuses. No significant differences were noted between female and male students, or between students with or without disabilities.



PRIORITIZED COURSE DEVELOPMENT

What aspects of the course should be developed primarily? How can these aspects be developed in short and long term?

In the short term the course development aim is to provide the course as an on-KTH campus course only, with students from the KTH international Master Programme "Technology, Work and Health" and with students on exchange at KTH from the Botho University in Botswana. This to make it easier to communicate and work in the course.

In the long term perspective (one or two years) the objective is to include students at both universities again. However, to improve the conditions for all students to be successful in the course, the ICT has to be improved, mainly the sound quality during learning activities. In addition, the objective is to more precisely describe what is expected from the course participants and, also in collaboration with colleagues at the Botho University, design the selection process for those interested in following the course at the Botho campus. Further, although we had a teacher exchange in the middle of the course for a week each for teachers from both campuses, it is, as I see it important that main teacher meets students at both campuses, early in the course and that teaching is provided from both campuses more equally distributed. These changes would lead to, I believe, a stronger sense of "belonging" to the course also among the students at the Botho campus, and likely have a positive impact on them acquiring the learning outcomes, as well as them passing the whole course.

In the next course round (HT 2020) the course will be run as an on KTH campus course only.

OTHER INFORMATION

Is there anything else you would like to add?

It has been both challenging and rewarding to develop and carry out this course, in comparison to other, more traditionally designed courses I have developed and run at KTH. I believe that to equip our students with competences needed to help solving the challenges we face and will face in the future, it is important to train the students' skills to work in in multicultural collaborative contexts with real, open-ended societal challenges. I hope that this course contributes to that. The collaboration with colleagues both at KTH and at Botho University, as well as with stakeholders in Sweden and in Botswana and with students at both universities has been very stimulating and increased our competences and networks. It has also brought much joy.
