

Report - EQ2341 - 2022-09-07

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):

Saikat Chatterjee (sach@kth.se)

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 was given P4, 2022. We had 51 students. After the course, at the time of course feedback and evaluation, somehow the standard KTH course evaluation system was not working. The course evaluation request was formally sent to students, but the system was not working. Therefore we took help of Google feedback system and sent the (almost) same questions with some additional questions to the students. 24 students out of 51 students used the Google feedback system. Meanwhile the KTH system started working and 7 students out of 51 used the KTH feedback system. It is not clear whether there are overlap between these two group of students who used Google and KTH system.

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.)

Regular classes for teaching, tutorial. Some students came later for suggestion to improve grades via ReExam.

COURSE DESIGN

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

Learning activities include engaging discussions in classes and tutorials, master tests, short Q/A based discussion in classes, exam and projects. There was not much change from last course round. However, this time students were advised to use Python for coding in projects instead of Matlab.

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?

Students' feedback is reasonable on this aspect.

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 ReExam grading is not yet done fully while writing this course evaluation, but we have already checked the ReExam two days back and some students improved their grades who missed to have a high grade in the regular exam. So, after the ReExam, we think the results will be at par with the previous course round.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

It is better that future students explicitly go through the exact feedback on the course. Therefore the pdf file containing the feedback and opinions will be attached.

SUMMARY OF STUDENTS' OPINIONS

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

On the good side when the students are requested to point the best aspects of the course, they mentioned lecture style, company participation, projects, rich content of the course, etc. On the poor side, when the students are requested to point the improvement scopes, they mentioned lack of clarity in instructions, explicit instructions in the code level for projects, TA correspondence, etc.

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.

Perhaps next time we should have a compendium on projects. But that precludes changes in projects as the machine learning area today is very fast changing on applications contexts.

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?

Quality of tutorials could be improved. However, TAs are our PhD colleagues and it is difficult for them to gain enough experience in teaching within their PhD study period. My interaction with them is that both the TAs Xuechun Xu and Amaury Gouvenieur tried as much as possible to extend help to students.

PRIORITIZED COURSE DEVELOPMENT

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

Course video lectures. Surprisingly, there is no comment on this missing aspect. However, students suggested to attend physical lectures, which are encouraging post Covid.

Feedback on Course: EQ2341 Pattern Recognition and Machine Learning

Year: P4 2022

Main Teacher: Saikat Chatterjee

TAs: Amaury Gouverneur and Xuechun Xu

There are 51 students in this round of the course. There was a technical problem at the time of taking online feedback, an IT system problem. So, the teacher requested feedback via Google feedback system and KTH feedback system. The number of students gave feedback via these two systems are as follows.

1. Google feedback – 24 students
2. KTH feedback – 7 students

It is not clear whether there is any overlap between students who used these two feedback systems.

The feedbacks from the two systems are attached.

Using Google Feedback System

Student feedback for EQ2341 course, 2022

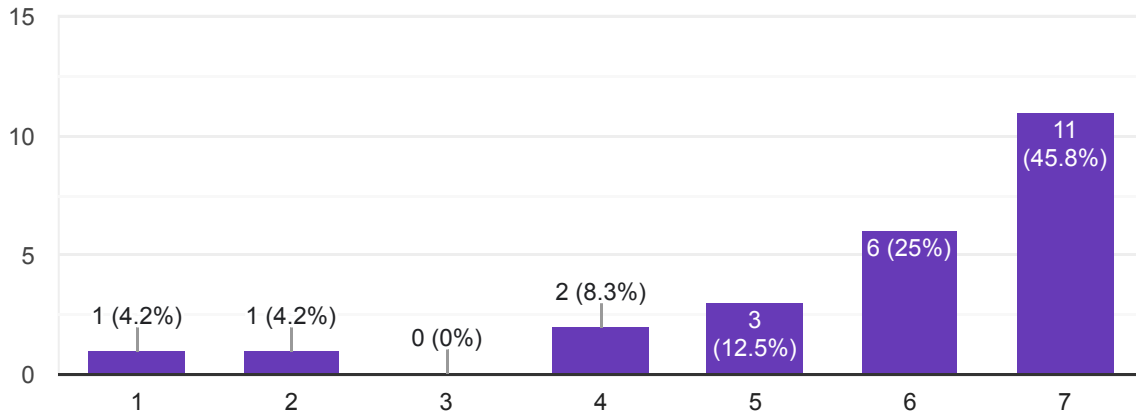
24 responses

[Publish analytics](#)

I worked with interesting issues

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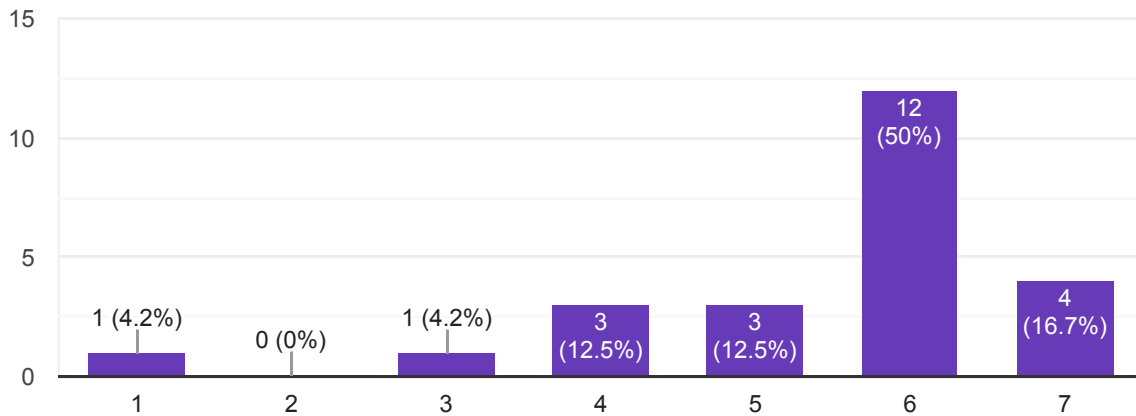
24 responses



The course was challenging in a stimulating way

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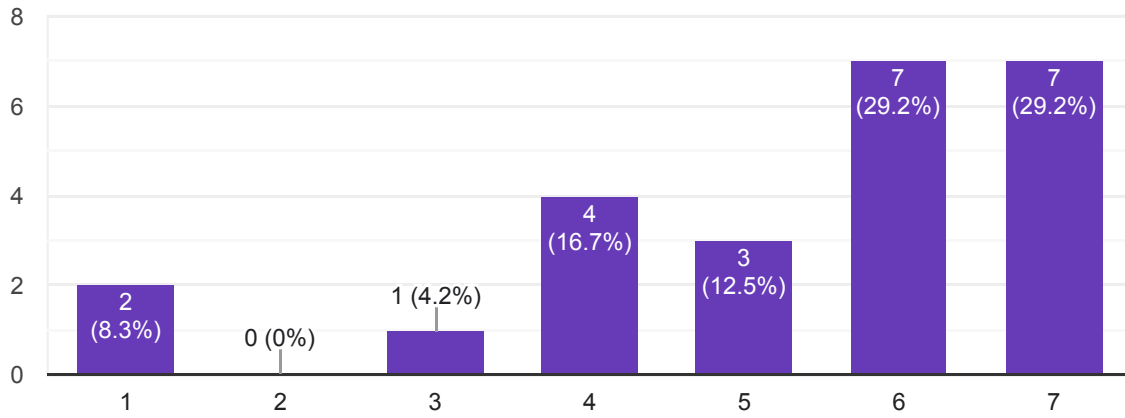
24 responses



I was able to learn by collaborating and discussing with others



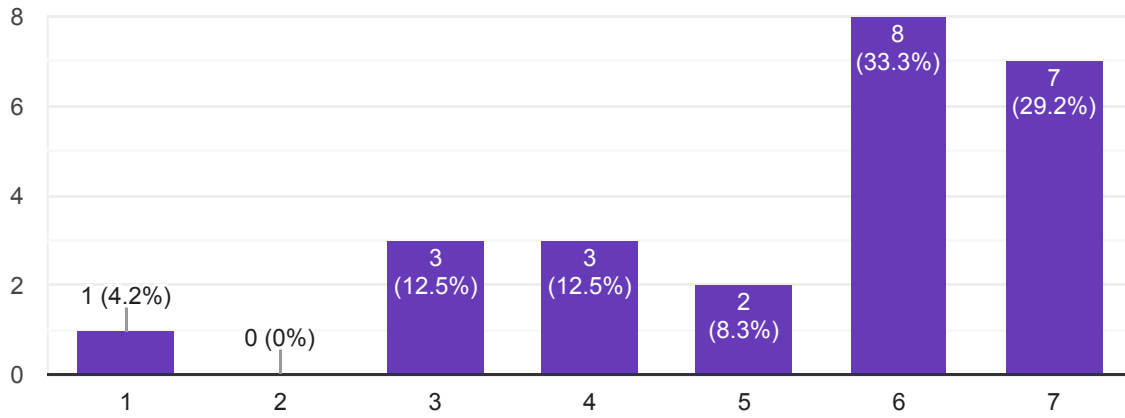
24 responses



I was able to get support if I needed it



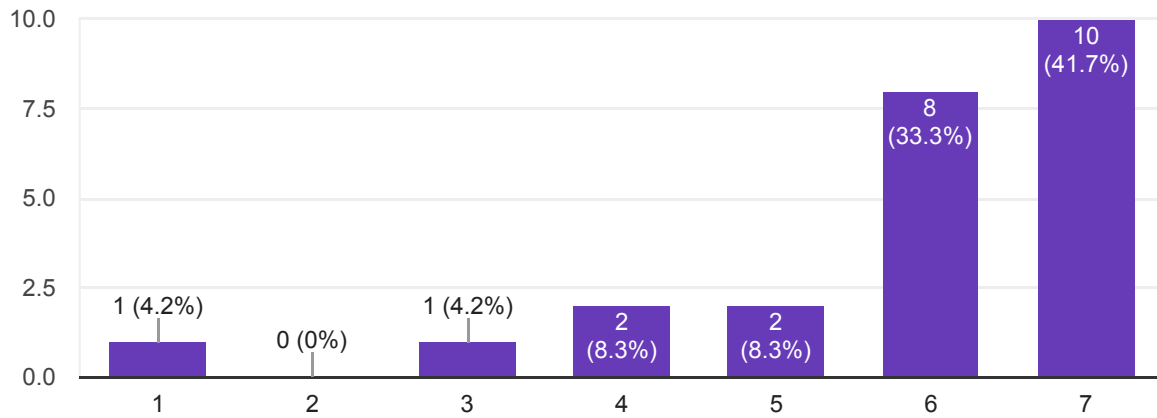
24 responses



I was able to learn from concrete examples that I could relate to



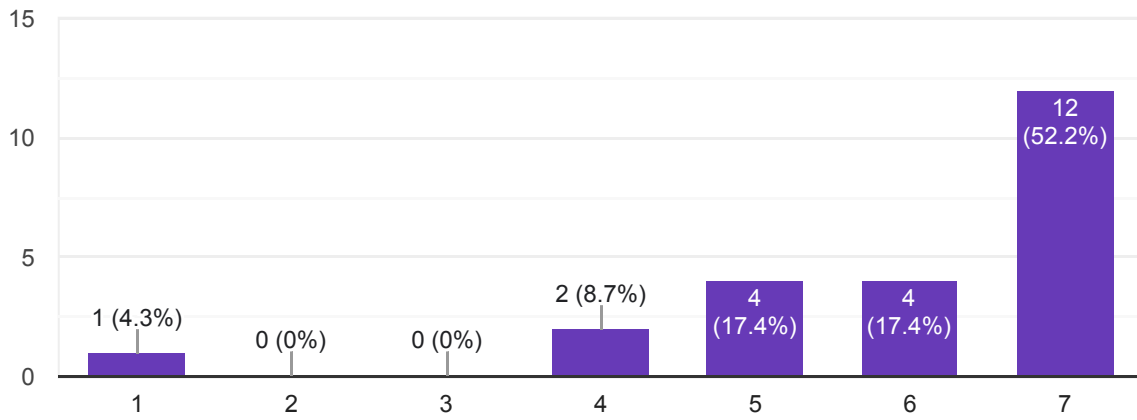
24 responses



The assessment on the course was fair and honest



23 responses



What was the best aspect of the course?

18 responses

The project is really fun.

The companies' lectures

The final project was challenging but really interesting

Interesting cours

I think it is good to have a project which is aiming for a working application. Also it is great that there are industry lectures from „big-players“ like google. The teaching style is also very engaging and can get you excited for the topic

I like the structure of the course. After learning that I got a good understanding about HMM, Bayesian, etc. it is quiet useful for future study.

I liked the lectures, they were integrering and not just powerpoint slides. Saikat is good at keeping your interest and attention. You got to understand the depth of the concepts in the course. The lab and project work was also nice. I also enjoyed the industry presentation, as they gave you an insight in how the concepts you learn during the course are used in industry.

Good lectures, nice to have them not on zoom! Good size of the labs, they were all managable within the time befor the deadlines! Also nice that we had tutorials in the course!

The lectures were very good and engaging. Another "best aspect" was Xu the TA. She responded immediately to emails 7 days a week and were always very helpful.

the improvisation talks about the current research situation

The project.

Practice of the methods in our project.

Rich course content.

Group Project

I liked that Saikat took an interest in the ethics of what we use these methods for. It is something I have otherwise found lacking at KTH.

The final project on recognition problems

The very interesting topic and Saikats enthusiasm to help us really understand the concepts.



we can combine math and programming together. we can also apply what we?have learned to practice.



What would you suggest to improve?

16 responses

Better instructions on the project, less bugs for given codes.

Having an index beforehand the topics that would be covered in the next class

Involve more practical examples and discussion of them

Update the instructions to the assignments so they are compatible with python.

The course felt a little chaotic, a lot of things were only announced on request (e.g. what the Deadlines for the project mean), it is (still not) completely clear how the course will be graded. The course structure should be a little more organized and communicated. Also, the final part of the project was a huge challenge for us, since the book claimed it to be „conceptually simple“, in reality, we spent multiple days and nights before the deadline debugging our python code, and it still did not really work in the end. This could have been maybe prevented if there was a more concise project description, or if the TA would have had time for a meeting (which she unfortunately did not). But the way it was done, we felt kind of lost and it turned out to be very frustrating. More guidance would be nice!

Also, I think more visualizations during the lectures might be profitable for a lot of us, and would help us grasp the equations. Maybe some slides wouldn't hurt, or showing a little more from Bishop (the lecture notes are very equation-oriented)

Another note: it's hard to answer question about how fair the assessment was, when the grading hasn't been published. Also, this form isn't anonymus (I have to enter my email). It definitely should be anonymus (again, especially if you want us to fill it in before the grading is done) and it can be, if you don't put a mandatory email field at the top.

The project part can be more explicit.

It would be nice to know the date of the master test from the beginning of the course.

We still have not recieved any feedback on lab 3 and 4, it would have been nice to get feedback on these before the project as the code for the project depends on the code we wrote in those labs.

There has to be breaks in the lectures. After 60 min of straight lecturing it's impossible to pay attention so the extra time spent lecturing instead of taking a break is typically completely wasted because.

Usually, a ML course like the one on the coursera will teach things like logistic regression LASSO etc. maybe can add a little bit more on those kind of things. But the course prepared us to self-learn those in a short time.

There may be a variety of ways to participate in the classroom.



I hope the teacher can explain the project code in the tutorial.

What I felt was missing during the course was TA help sessions for the labs. While working on the labs we got stuck on many small things, which we emailed the TAs about, and they helped us. However, this correspondence was very slow, and I feel like it could have saved us many hours of work if we were able to discuss how to approach the problem with a TA at the beginning. We had to redo our approach to the project a few times because we started of wrong.

If possible, less complex calculation in the exam.

If there is anything I would spend time on improving it would be the project instructions and material. The instructions are very old and made for Matlab. The material is missing many functions/methods and function/method descriptions that are assumed to be provided in the instructions. There are also a lot of scale factors for "computational reasons" that I would have liked to be more clearly explained as I spent a lot of time reversing what we were supposed to to. They are very interesting though and that is why I would really like to see them improve.

I would also like to see the course evaluations published so that future students can benefit from previous students reflections.

Maybe we can cover more contents.



What advice would you like to give to future participants?

14 responses

Enjoy the course!

Read the notes before class

Basic concepts matter! Remember to review what you learned after each course.

Start thinking about the complete project from the start, so that you are prepared when the deadline approaches and your code is thought through right away

Enjoy! You will like it!

Follow the book! Read it along with the lectures and then again to really understand the content. Very good book.

Start working with the labs and projects early and go to the lectures!

Read the textbook line by line.

Focus more on the mathematical inference of EM and Bayesian learning process.

Work harder.

Collaboration is important in this class. The project requires a combination of theory and practice.

Attend the lectures

Go to the exercises. Read the compendium. Ask for help when getting stuck in the projects.

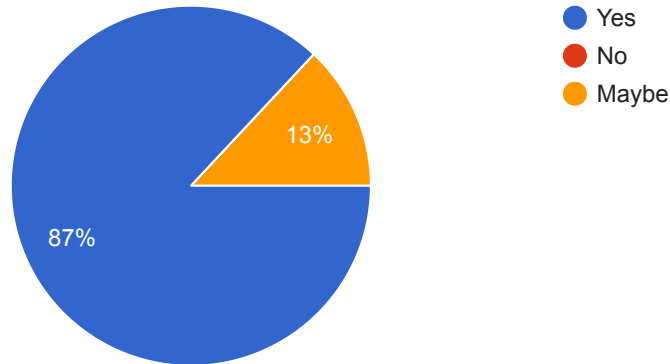
You may need some time to deduce formulas. That is not easy.



This year we tried to engage industry - Google and Scania. Would you recommend the industry participation and presentations in future course rounds?



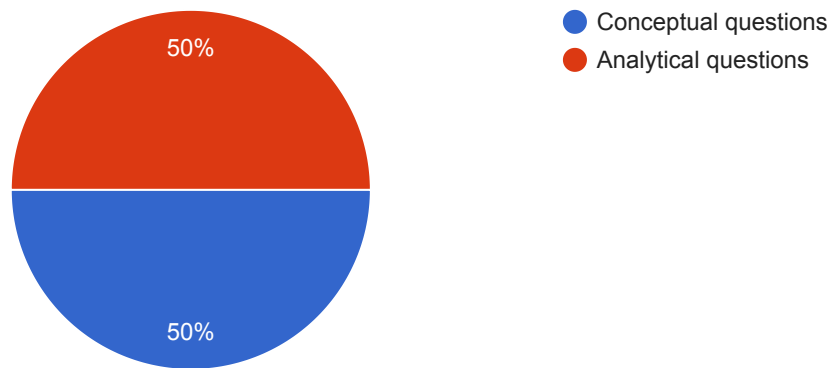
23 responses



In the final exam, would you like to have more conceptual questions or analytical questions?



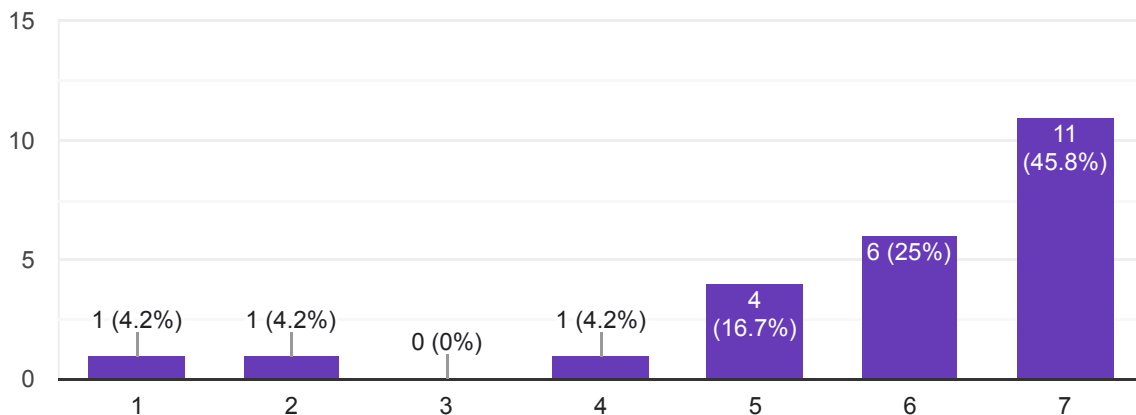
22 responses



Would you recommend Saikat Chatterjee as a teacher?



24 responses



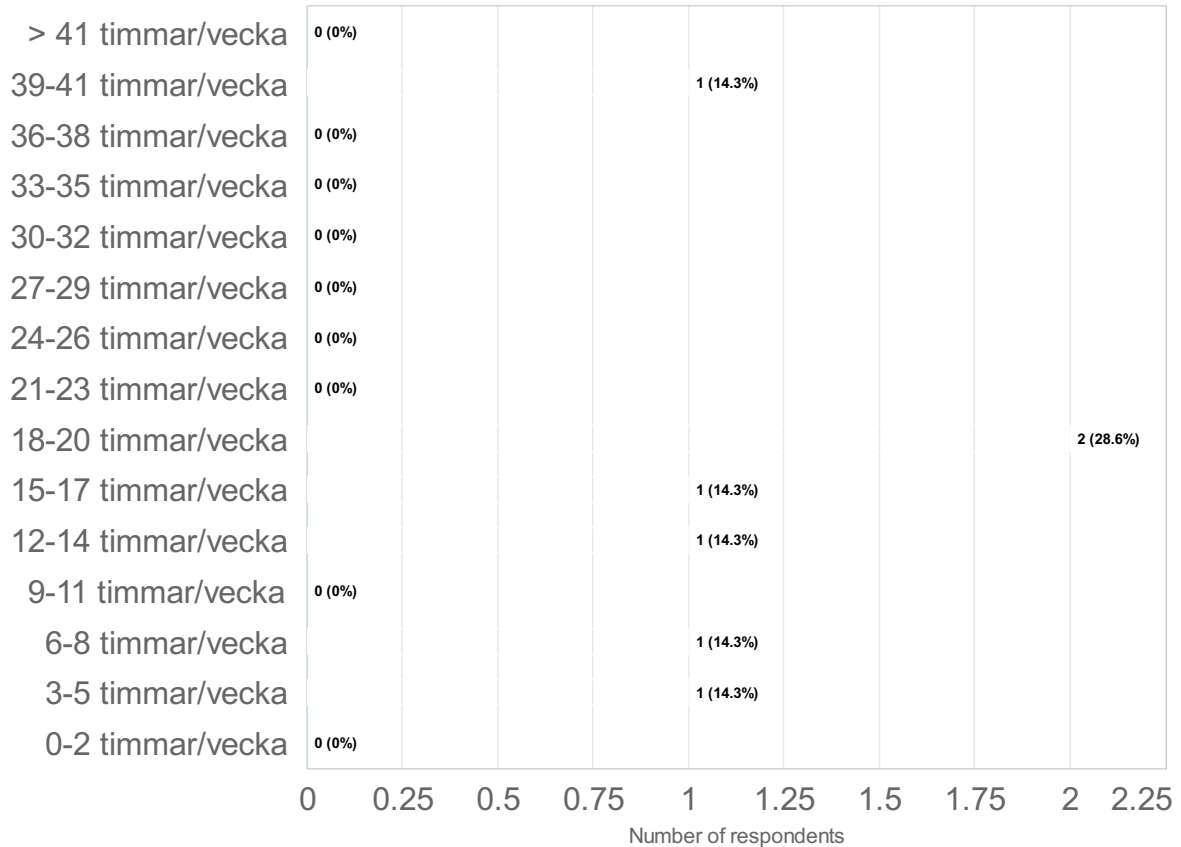
Using KTH Feedback System

EQ2341 - 2022-06-10

Antal respondenter: 51
Antal svar: 7
Svarsfrekvens: 13,73 %

ESTIMATED WORKLOAD

On average, how many hours/week did you work with the course (including scheduled hours)?



Comments

Comments (I worked: 3-5 timmar/vecka)

It would have been better for me to review the concepts after the classes.

Comments (I worked: 12-14 timmar/vecka)

The workload was reasonable.

LEARNING EXPERIENCE

The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

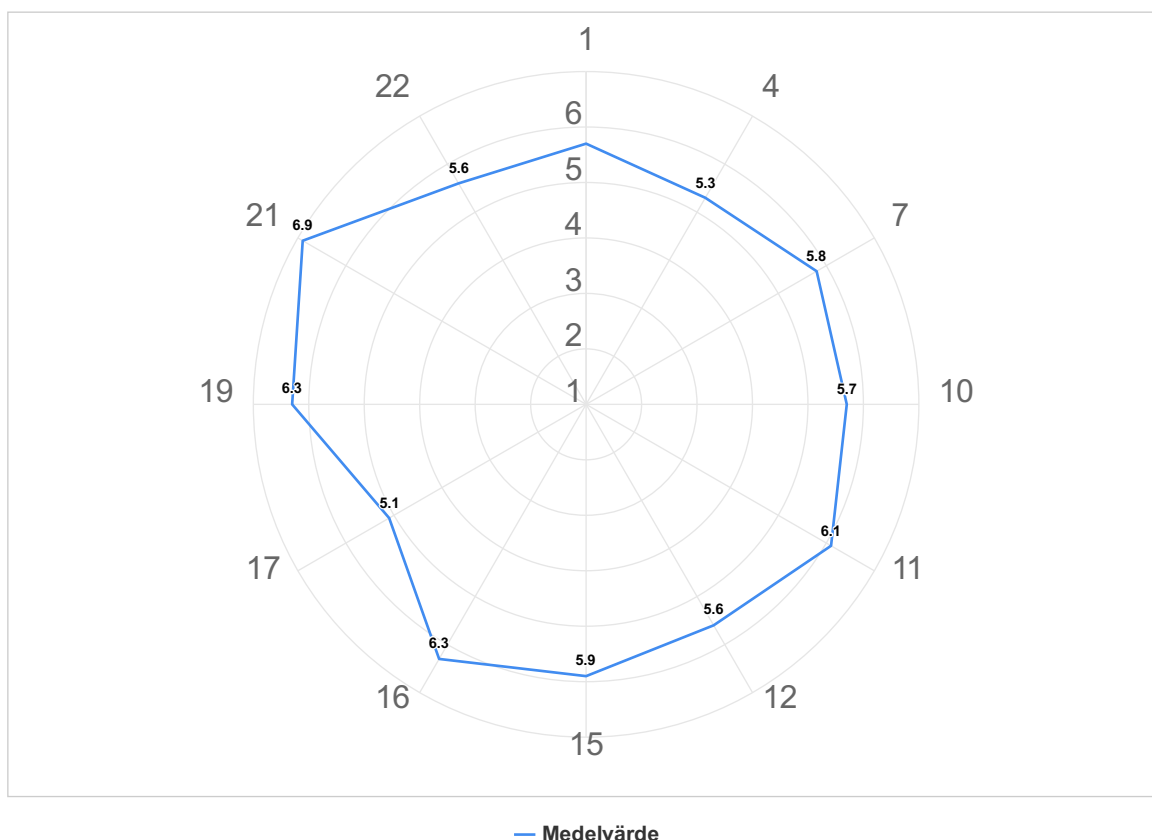
1 = No, I strongly disagree with the statement

4 = I am neutral to the statement

7 = Yes, I strongly agree with the statement

Note! A group has to include at least 3 respondents in order to appear in a diagram.

Average response to LEQ statements - all respondents



KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

1. I worked with interesting issues (a)

Exploration and own experience

2. I explored parts of the subject on my own (a)
3. I was able to learn by trying out my own ideas (b)

Challenge

4. The course was challenging in a stimulating way (c)

Belonging

5. I felt togetherness with others on the course (d)
6. The atmosphere on the course was open and inclusive (d)

Comprehensibility - cognitive level

Clear goals and organization

7. The intended learning outcomes helped me to understand what I was expected to achieve (e)
8. The course was organized in a way that supported my learning (e)

Understanding of subject matter

- 9. I understood what the teachers were talking about (f)
- 10. I was able to learn from concrete examples that I could relate to (g)
- 11. Understanding of key concepts had high priority (h)

Constructive alignment

- 12. The course activities helped me to achieve the intended learning outcomes efficiently (i)
- 13. I understood what I was expected to learn in order to obtain a certain grade (i)

Feedback and security

- 14. I received regular feedback that helped me to see my progress (j)
- 15. I could practice and receive feedback without being graded (j)
- 16. The assessment on the course was fair and honest (k)

Manageability - instrumental level

Sufficient background knowledge

- 17. My background knowledge was sufficient to follow the course (f)

Time to reflect

- 18. I regularly spent time to reflect on what I learned (l)

Variation and participation

- 19. The course activities enabled me to learn in different ways (m)
- 20. I had opportunities to influence the course activities (m)

Collaboration

- 21. I was able to learn by collaborating and discussing with others (n)

Support

22. I was able to get support if I needed it (c)

Learning factors from the literature that LEQ intends to examine

We tend to learn most effectively (in ways that make a sustained, substantial, and positive influence on the way we think, reflect, act or feel) when:

a) We are trying to answer questions, solve problems or acquire skills that we find interesting, exciting or important

b) We are able to speculate, test ideas (intellectually or practically) and learn from experience, even before we know much about the subject

c) We are able to do so in a challenging and at the same time supportive environment

d) We feel that we are part of a community and believe that other people have confidence in our ability to learn

e) We understand the meaning of the intended learning outcomes, how the environment is organized, and what is expected of us

f) We have adequate prior knowledge to deal with the current learning situation

g) We are able to learn inductively by moving from concrete examples and experiences to general principles, rather than the reverse

h) We are challenged to develop a true understanding of key concepts and gradually create a coherent whole from the content

i) We believe that the work we are expected to do will help us to achieve the intended learning outcomes

j) We are able to try, fail, and receive feedback before, and separate from, each summative assessment of our efforts

k) We believe that our work will be considered in an honest and fair way

l) We have sufficient time for learning and devote the time needed to do so

m) We believe that we have control over our own learning, and not that we are being manipulated

n) We are able to collaborate with other learners struggling with the same problems

Literature

Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

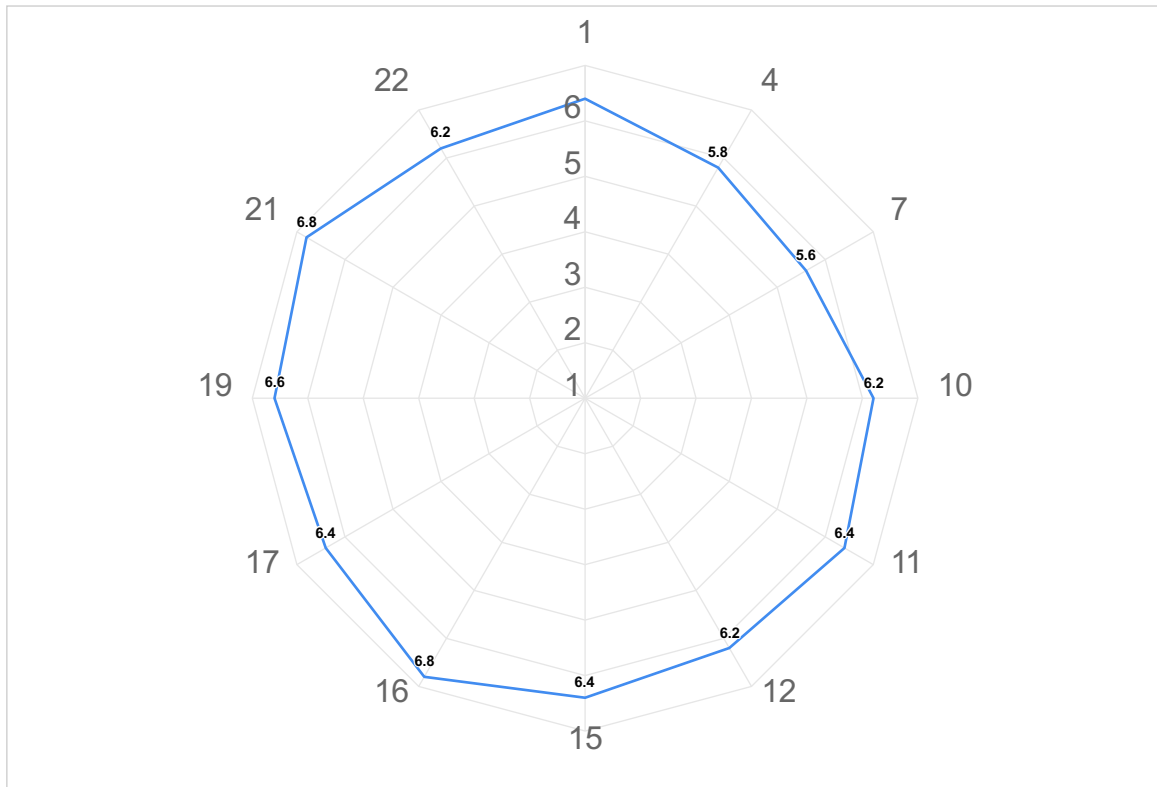
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

Elmgren, M. & Henriksson, A-S. (2014). *Academic Teaching*, Chapter 3, pp. 57-72. Lund: Studentlitteratur.

Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

Average response to LEQ statements - per gender



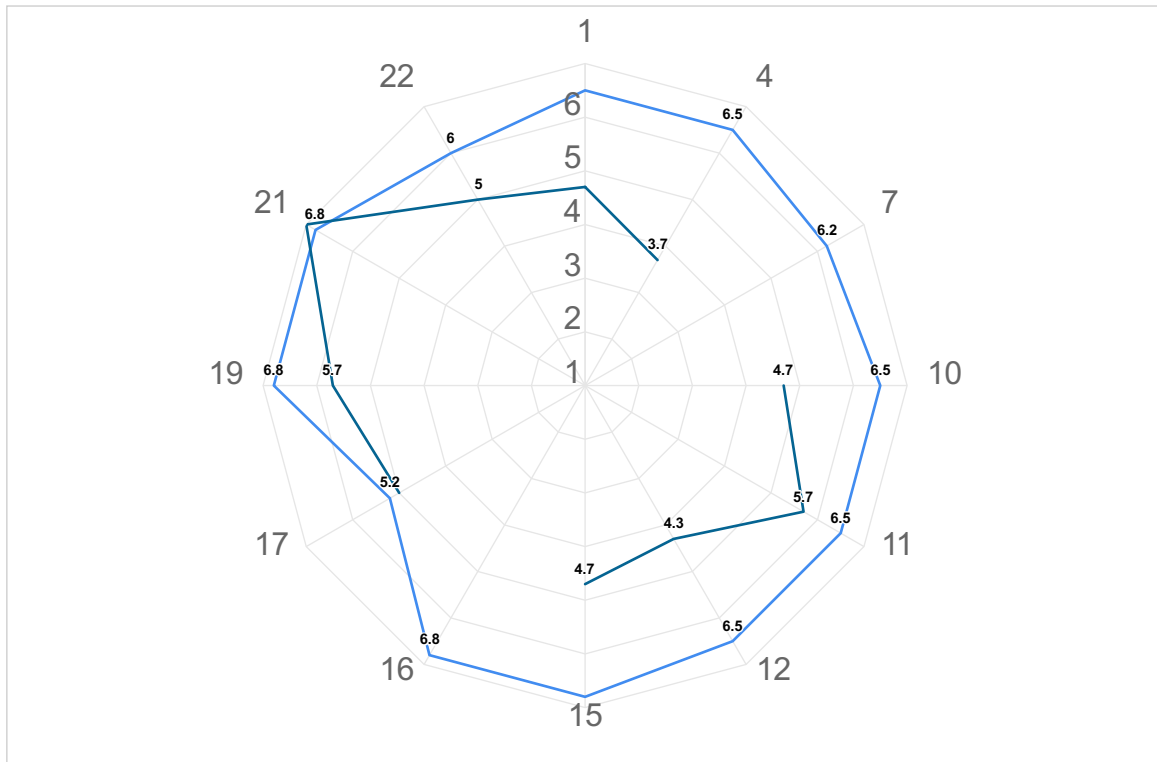
— Kvinna — Man — Annat — Vill ej uppge

Comments

Comments (I am: Man)

It did not make a difference if we were male or female.

Average response to LEQ statements - per type of student



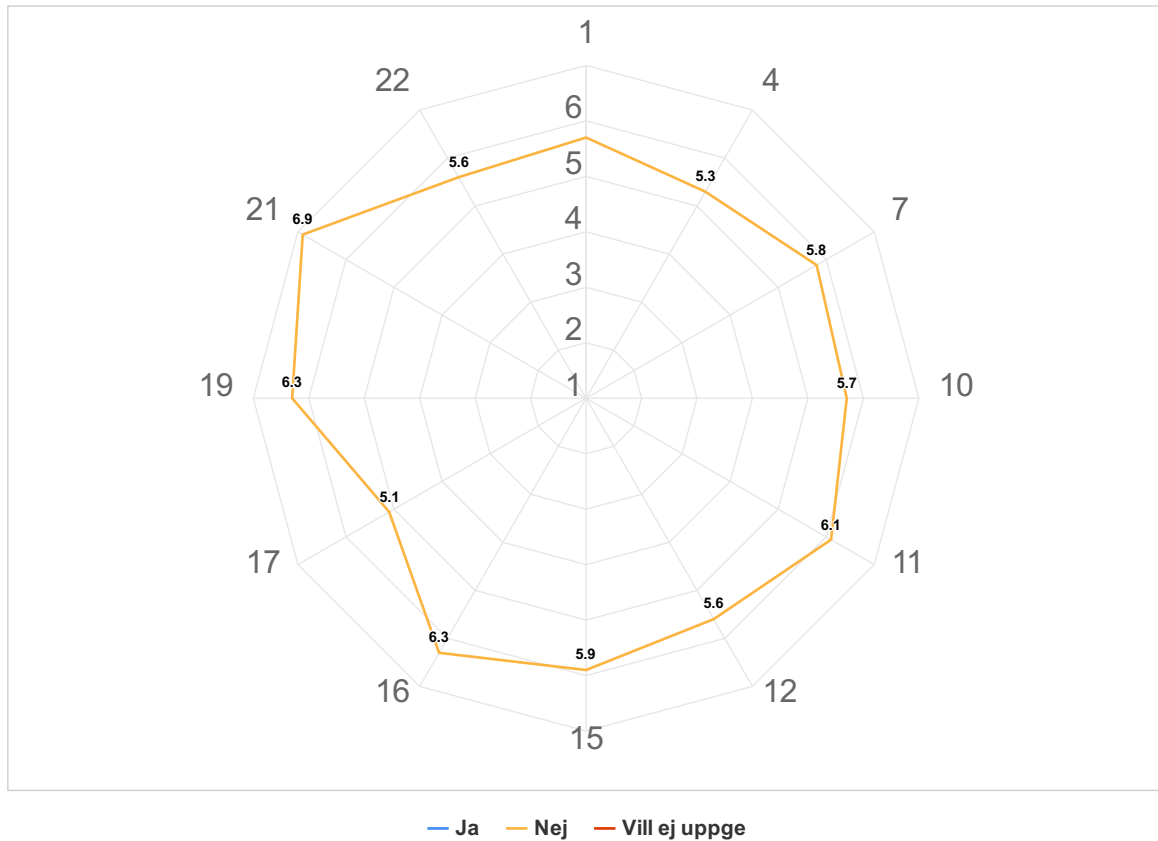
- Internationell masterstudent
- Svensk student i årskurs 4-5
- Internationell utbytesstudent
- Annan typ av student
- Svensk student i årskurs 1-3
- Vill ej uppge

Comments

Comments (I am: Internationell masterstudent)

The teaching is quite different from what I am used to, also the evaluation.

Average response to LEQ statements - per disability



GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 3-5 timmar/vecka)

The correlation between tutorials and classes

What was the best aspect of the course? (I worked: 12-14 timmar/vecka)

The lectures were very engaging and interesting, got to really understand the course concepts, not just blindly follow algorithms. Brought up interesting issues.

What was the best aspect of the course? (I worked: 15-17 timmar/vecka)

I liked that the lectures were more concentrated in the beginning of the period and that the labs started in the second half so that I could focus on one thing at a time

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)

The project was okey, since it was some practical

What would you suggest to improve?

What would you suggest to improve? (I worked: 3-5 timmar/vecka)

To space more the deadlines between projects because there is also other work to do and sometimes if you don't reach the solution quickly is difficult to deliver on time.

What would you suggest to improve? (I worked: 12-14 timmar/vecka)

More clear course schedule.

What would you suggest to improve? (I worked: 15-17 timmar/vecka)

I would have liked to receive feedback on the labs earlier, since following labs were dependent on the previous ones. So if you made a mistake early, it would affect all labs and you wouldn't know it.

The lab instructions do not correspond to what we were expected to do. Since it was written for matlab, a lot of suggested functions were not available and some code that was said to be given, we had to write ourselves. I would suggest rewriting the instructions to work for python and uploading them as separate pdf's on canvas. Also the one part of a lab where we essentially had to reverse-engineer the "scale factors" didn't really seem necessary and it could instead just been explained what they are so that we don't have to spend so much time on that.

The teacher found it disrespectful that not many showed up to the one industry lecture, but what I found disrespectful was that the teacher was late to every single one of the actual lectures. So I would suggest to improve some time management skills.

One exercise session was without TA for the first hour because they had forgotten about it and another was completely cancelled when we had already waited in the classroom for an hour. That could be improved.

It was encouraged to ask questions during the lectures and it was said that "there are no dumb questions". I did not feel comfortable asking questions because whenever someone did, the response they got was very discouraging and sometimes even rude. I would improve the approach to responding to students so that they don't feel bad when they actually participate in class.

The information available on canvas about the examination was very limited so it was very unclear what we needed to do to get a certain grade. Maybe one could make it clearer by instead of just saying that the grade will be "a" weighted sum of projects, master tests and exam, one could write out explicitly how the different parts are weighted.

What would you suggest to improve? (I worked: 18-20 timmar/vecka)

I would like some more real world examples to get more intuition. Also some sort of help time for the project/tasks, to get som help instead of trying until it worked without really knowing what's happening.

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 3-5 timmar/vecka)

To go to class having read the notes.

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)

Read the book and go to the lectures and tutorials, and you will get the moster out of the course!

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)

It would be nice to have an index posted with the topics taught in each session.

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)

No :) Thanks for the course!

SPECIFIC QUESTIONS

RESPONSE DATA

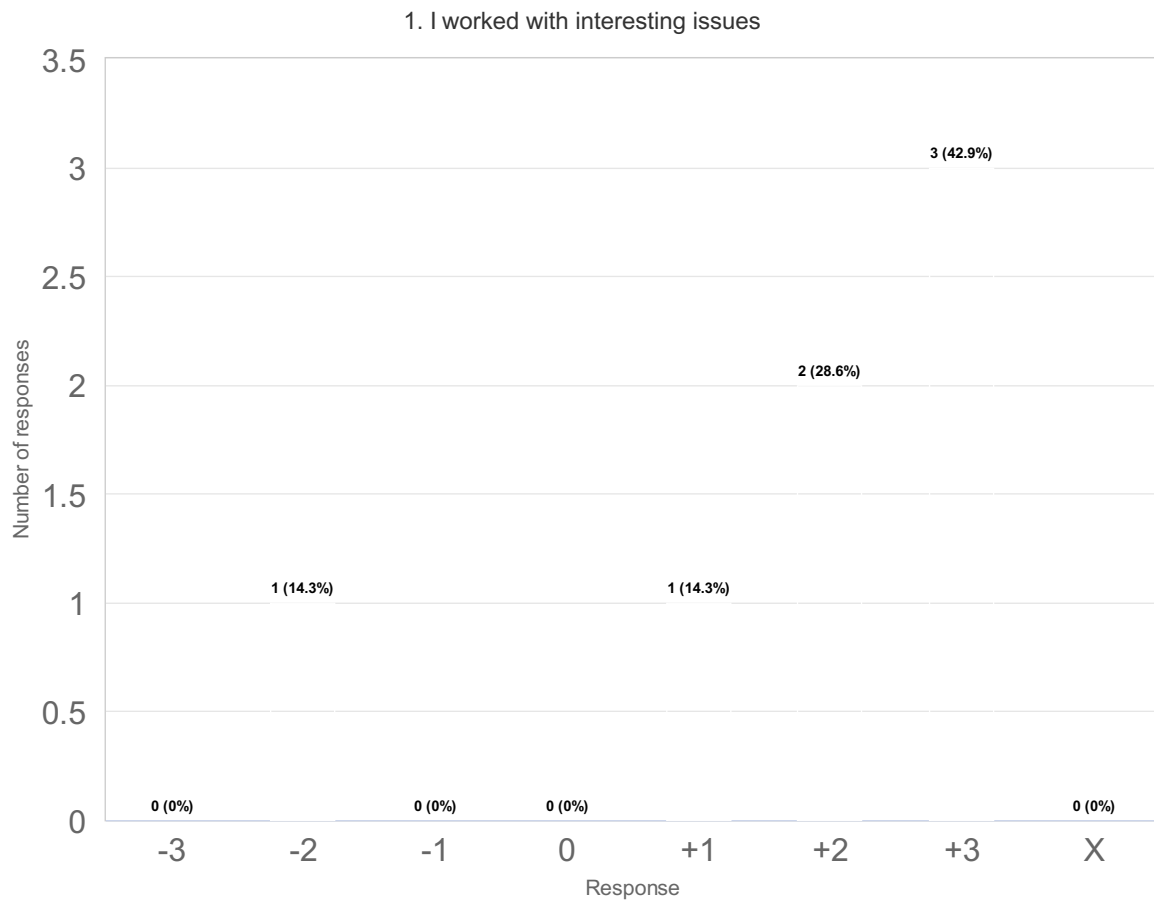
The diagrams below show the detailed response to the LEQ statements.
The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

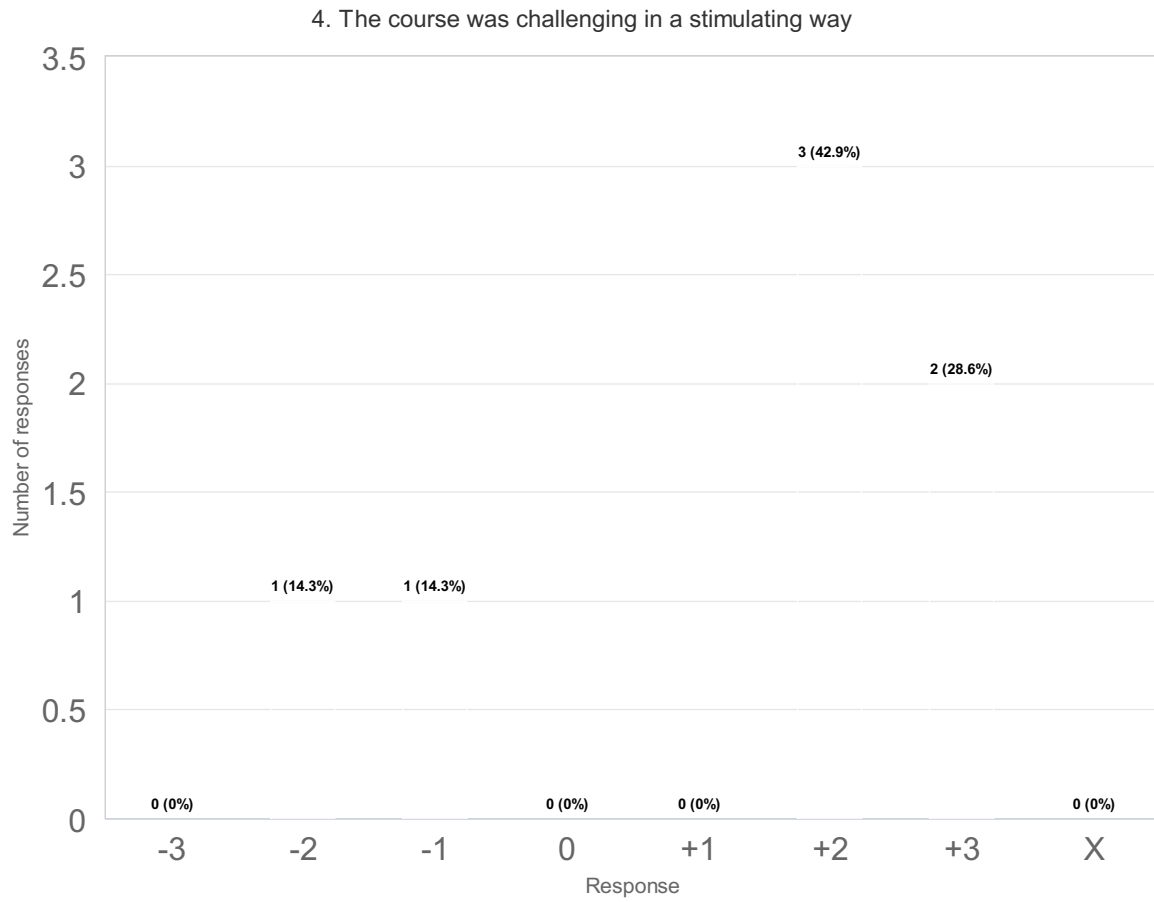
X = I decline to take a position on the statement



Comments

Comments (My response was: -2)

I would like some more real world examples to get more intuition

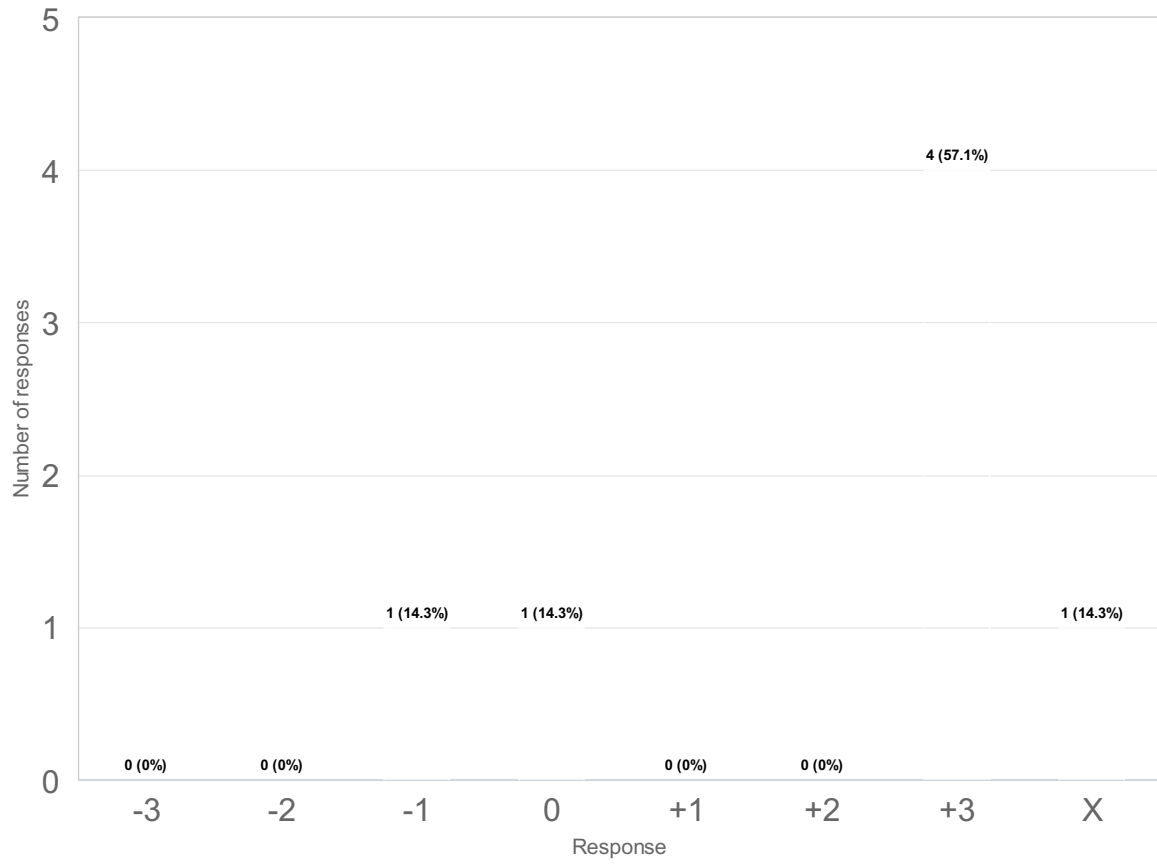


Comments

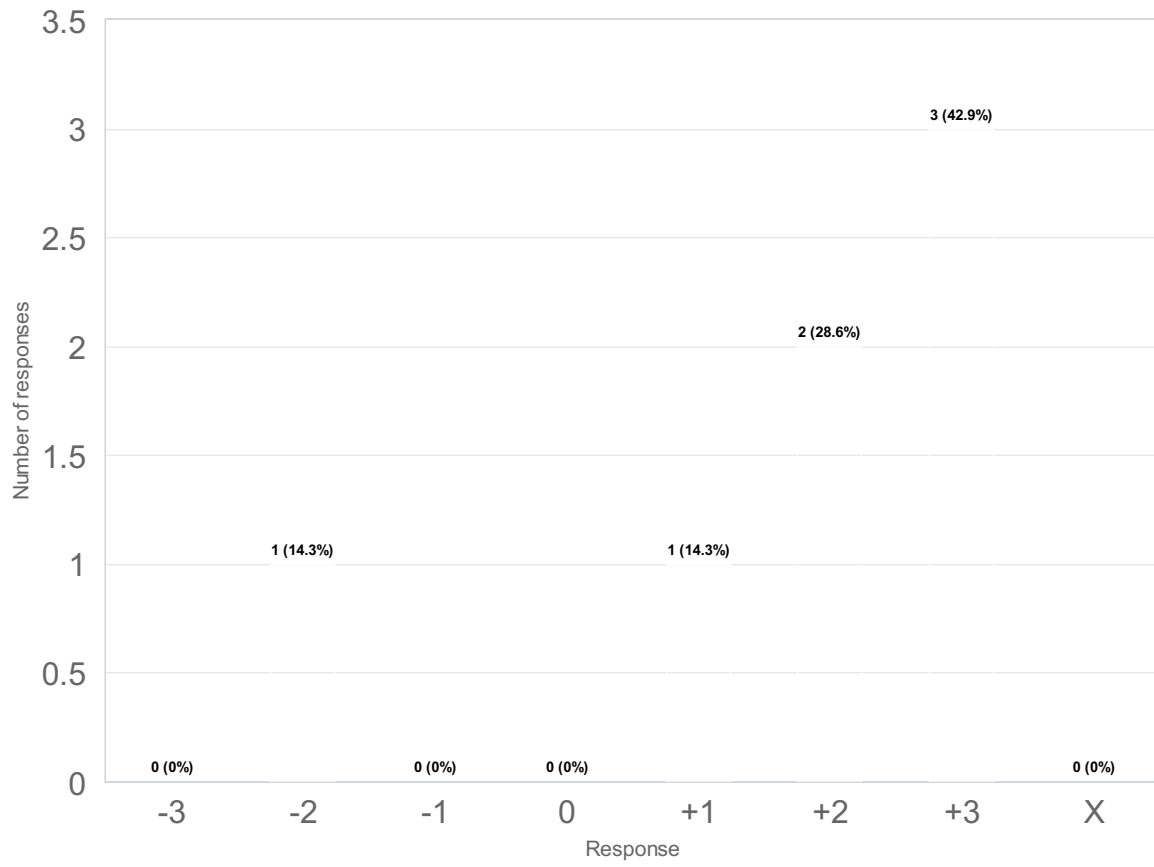
Comments (My response was: -2)

The course was challenging...

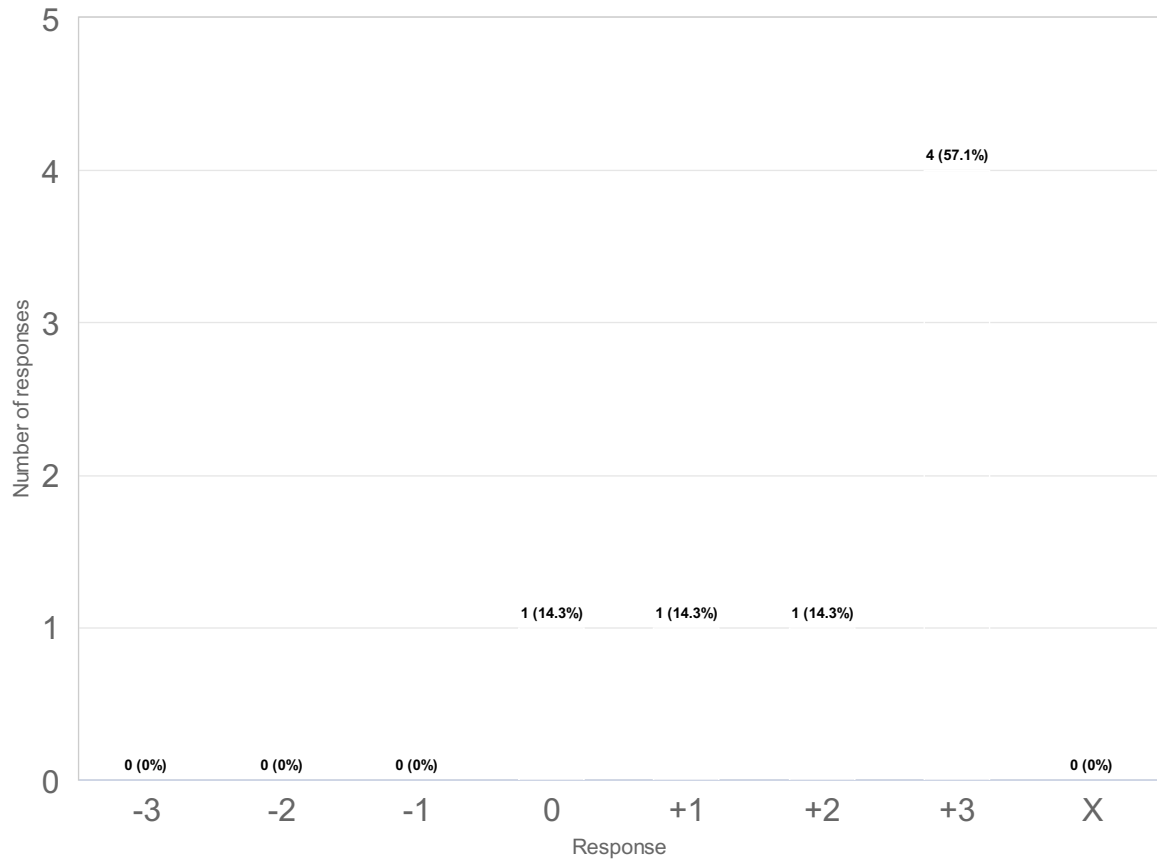
7. The intended learning outcomes helped me to understand what I was expected to achieve



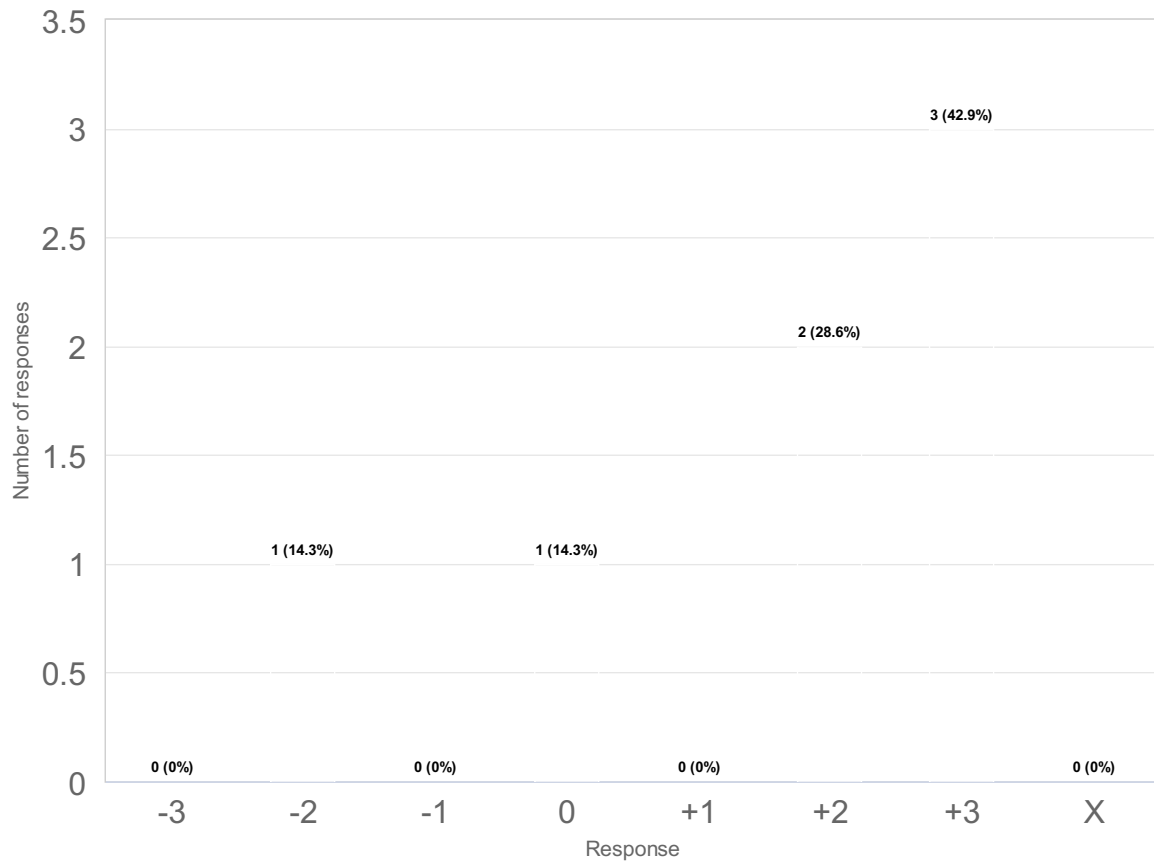
10. I was able to learn from concrete examples that I could to relate to



11. Understanding of key concepts had high priority



12. The course activities helped me to achieve the intended learning outcomes efficiently

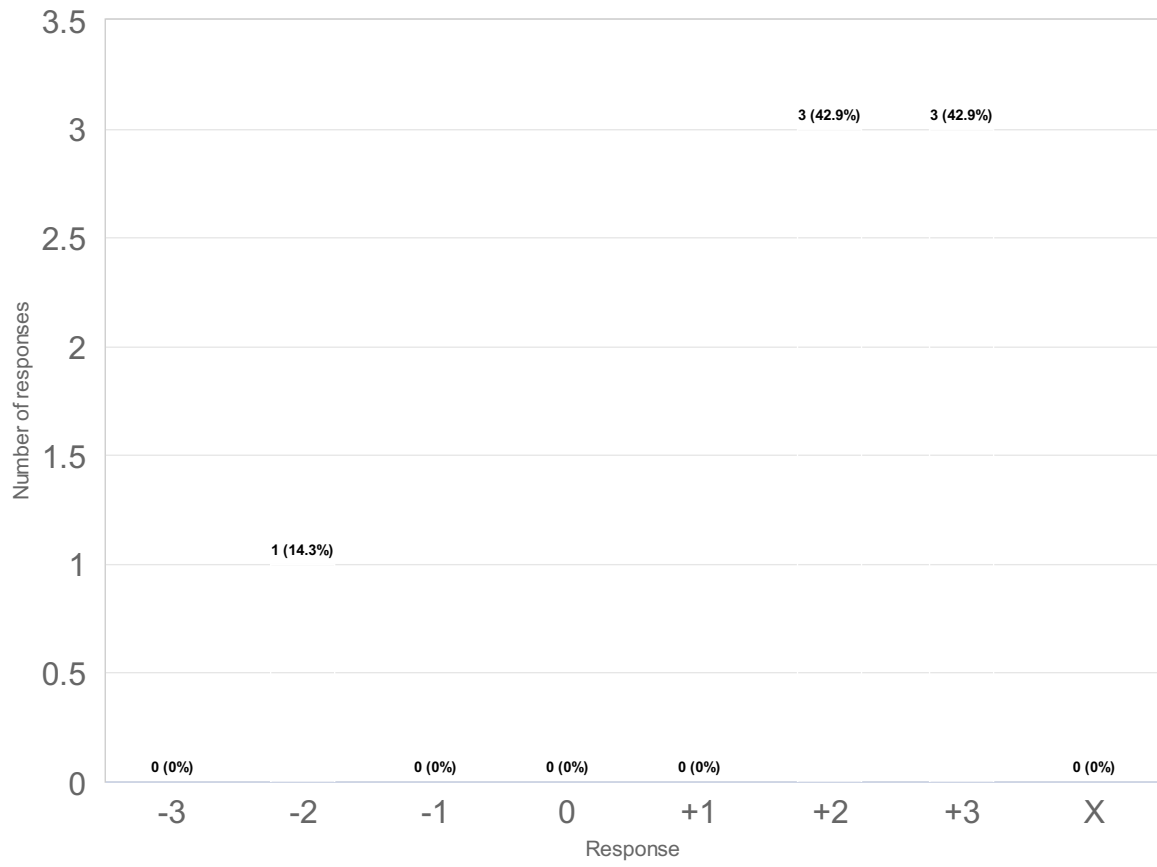


Comments

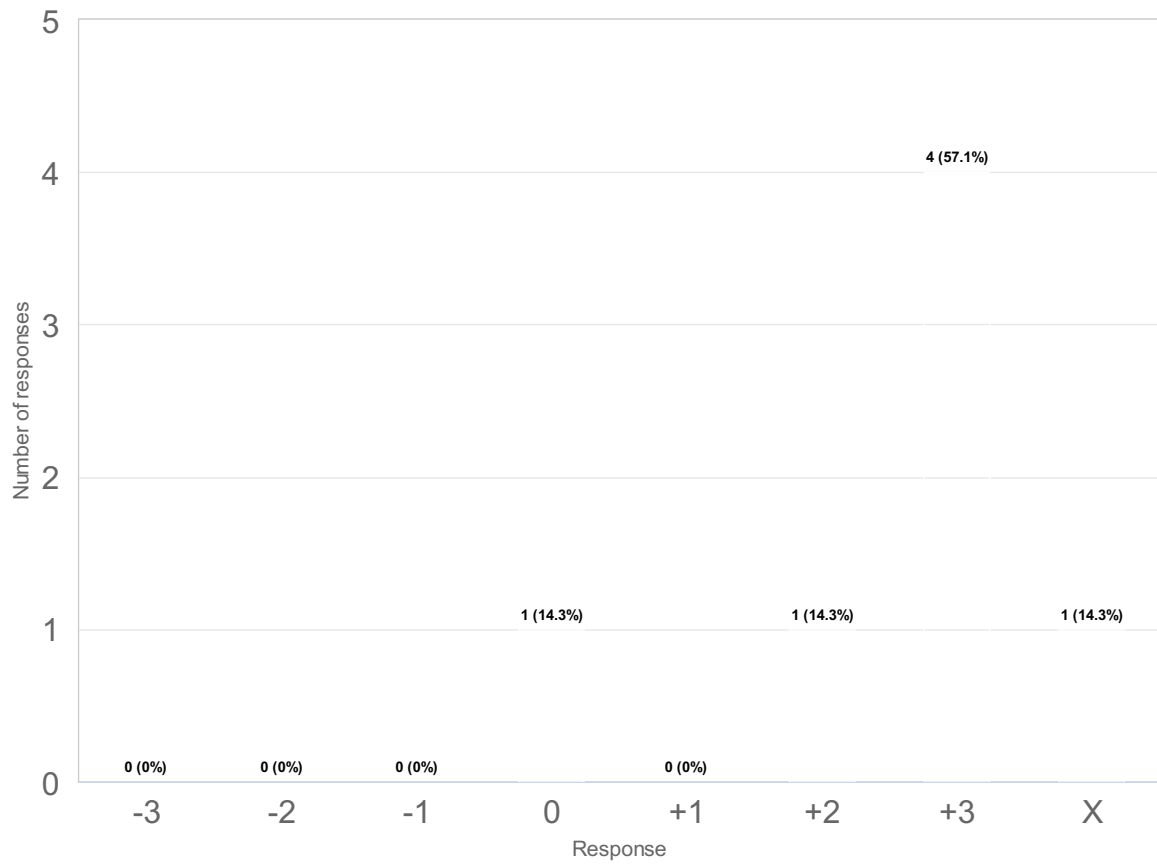
Comments (My response was: -2)

I would like some more real world examples to get more intuition

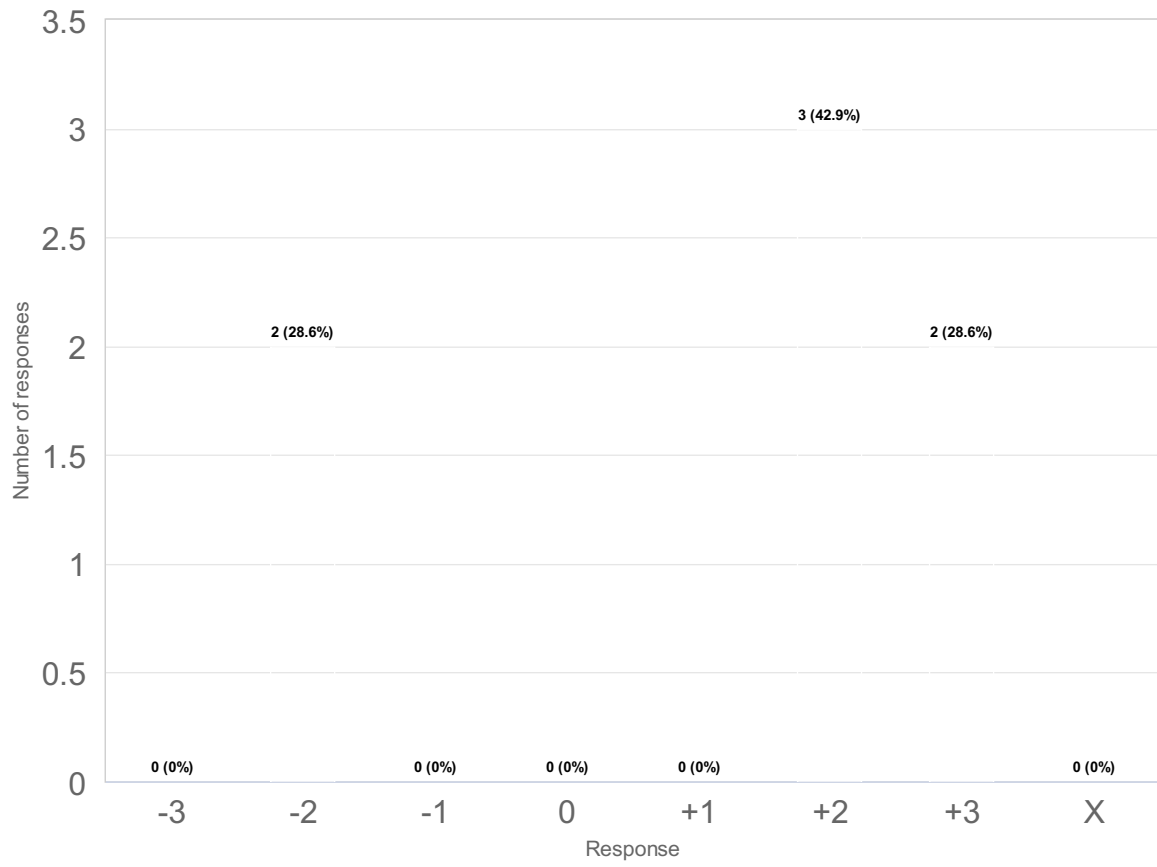
15. I was able to practice and receive feedback without being graded



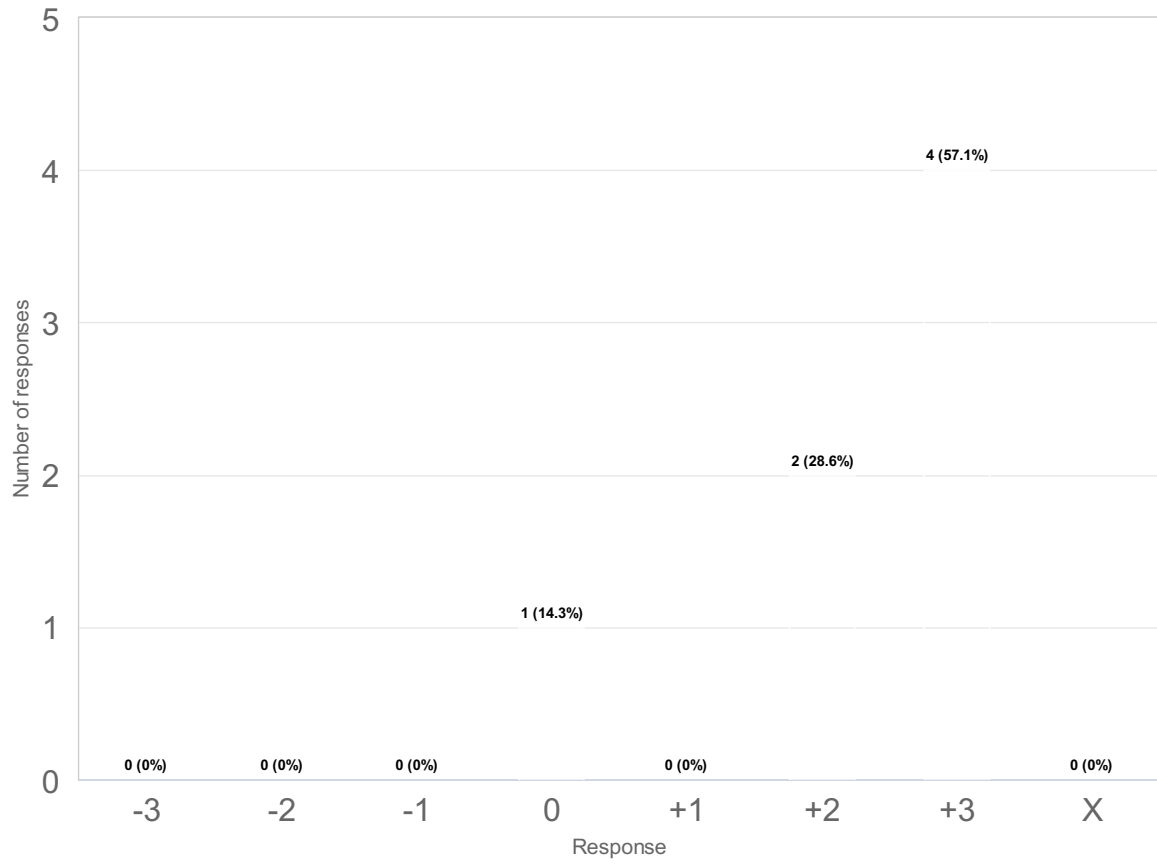
16. The assessment on the course was fair and honest



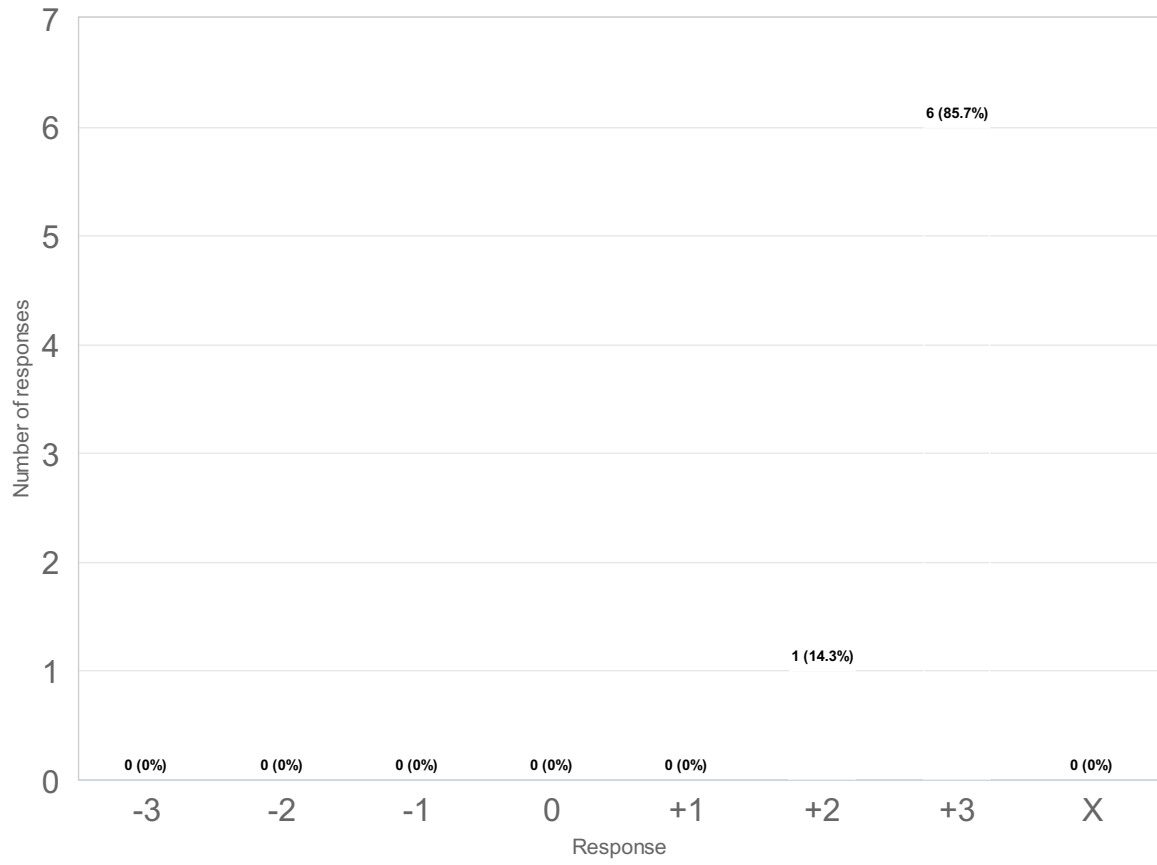
17. My background knowledge was sufficient to follow the course



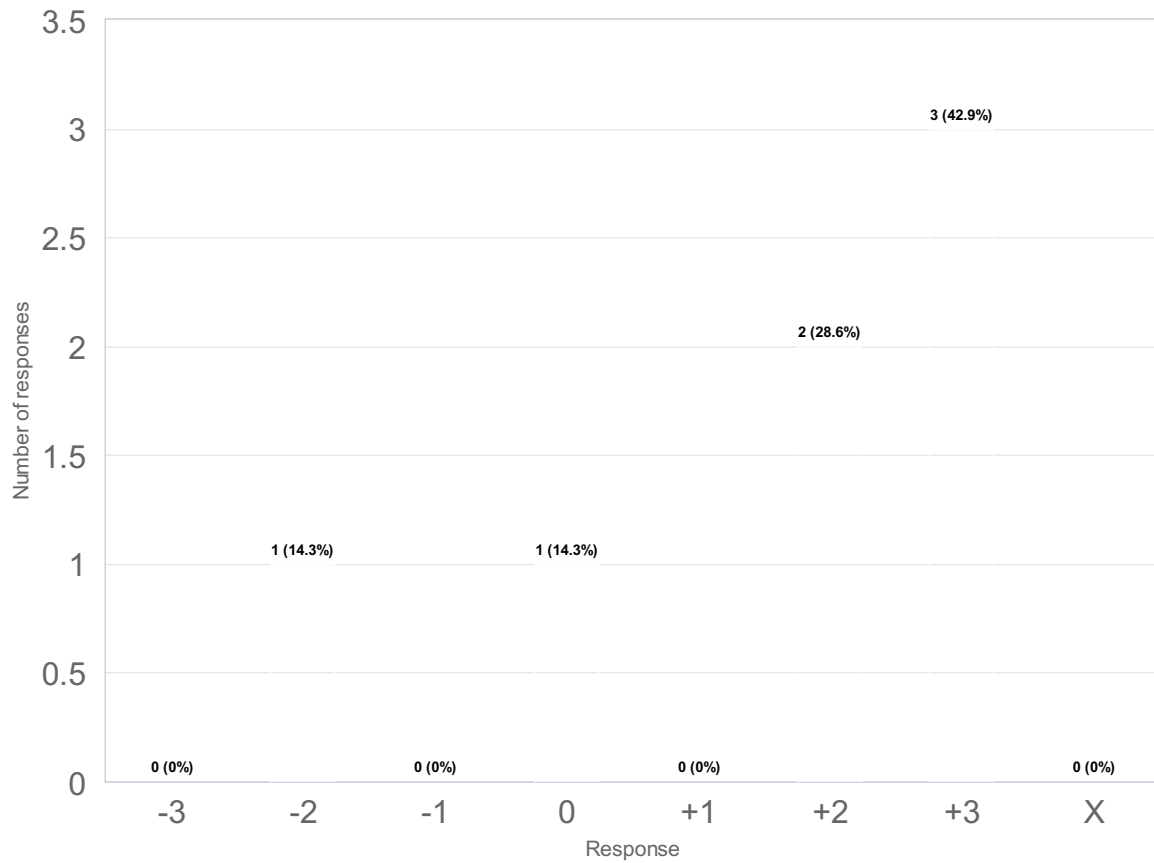
19. The course activities enabled me to learn in different ways



21. I was able to learn by collaborating and discussing with others



22. I was able to get support if I needed it



Comments

Comments (My response was: -2)

It was hard to get support for the tasks and project

SPECIFIKA FRÅGOR

This year we tried to engage industry - Google and Scania. Would you recommend the industry participation and presentations in future course rounds?

SPECIFIKA FRÅGOR

This year we tried to engage industry - Google and Scania. Would you recommend the industry participation and presentations in future course rounds?

Of course

I think that the industry presentations was really interesting, however, they didn't help that much for the course content.

Yes!!! Very enlightning, inspiring and interesting.

In the final exam, would you like to have more conceptual questions or analytical questions?

In the final exam, would you like to have more conceptual questions or analytical questions?

Conceptual questions

More conceptual

Conceptual questions are more fun, I think. But I think it is important to show you can do analytical computations as well.