

Report - EL2620 - 2024-04-08

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):

Elling W. Jacobsen, jacobsen@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 evaluation was mainly carried out through informal discussions with students concerning the topics and teaching methods of the course. At the end of the course the students were invited to fill in a course evaluation (enclosed).

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.)

Only informal meetings during breaks and after class. We did not get any volunteers for a course committee.

COURSE DESIGN

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

The course includes 28h lectures, 24h exercises (on whiteboard), 4 compulsory computer based Homeworks performed in groups of 2 students and a final written 5h exam. The Homeworks can give bonus points for the exam within the topic of the Homework.

THE STUDENTS' WORKLOAD

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

The students that have responded to the evaluation (only 13 out of 48 students) state that the workload is at or below the expected workload, and seems reasonable for most students.

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?

38 students wrote the ordinary exam, out of which 66% passed. Two students got grade Fx and was given the opportunity to raise the grade to E but both failed to do so. The grades were distributed as follows: A: 21%, B: 3%, C: 13%, D: 13%, E: 16%, F: 34%. This seems reasonable and on par with results in previous course offerings.

STUDENTS' ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

The students who answered appreciated both the theory covered as well as the hands-on assignments. In terms of things they would like to improve is more real life examples and more time for discussions

SUMMARY OF STUDENTS' OPINIONS

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

The students seem overall happy with the course content and the teaching. Several students consider that their background was not sufficient for the course.

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.

The course went well with most students coming to class and being active in asking questions. The students put a lot of effort into the Homeworks and the exam went relatively well. The impression was also that the students found the topics covered interesting. One possible weakness of the course is that it covers a large number of topics and therefore can not go into much depth in any of the topics. However, covering many topics is at the same time a positive aspect of the course. The trade-off between width and depth is something to consider more closely in future course rounds.

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?

No

PRIORITIZED COURSE DEVELOPMENT

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

Possibly reduce number of topics to allow time to go more in depth on topics covered. Add more real life examples.

EL2620 - 2024-01-18

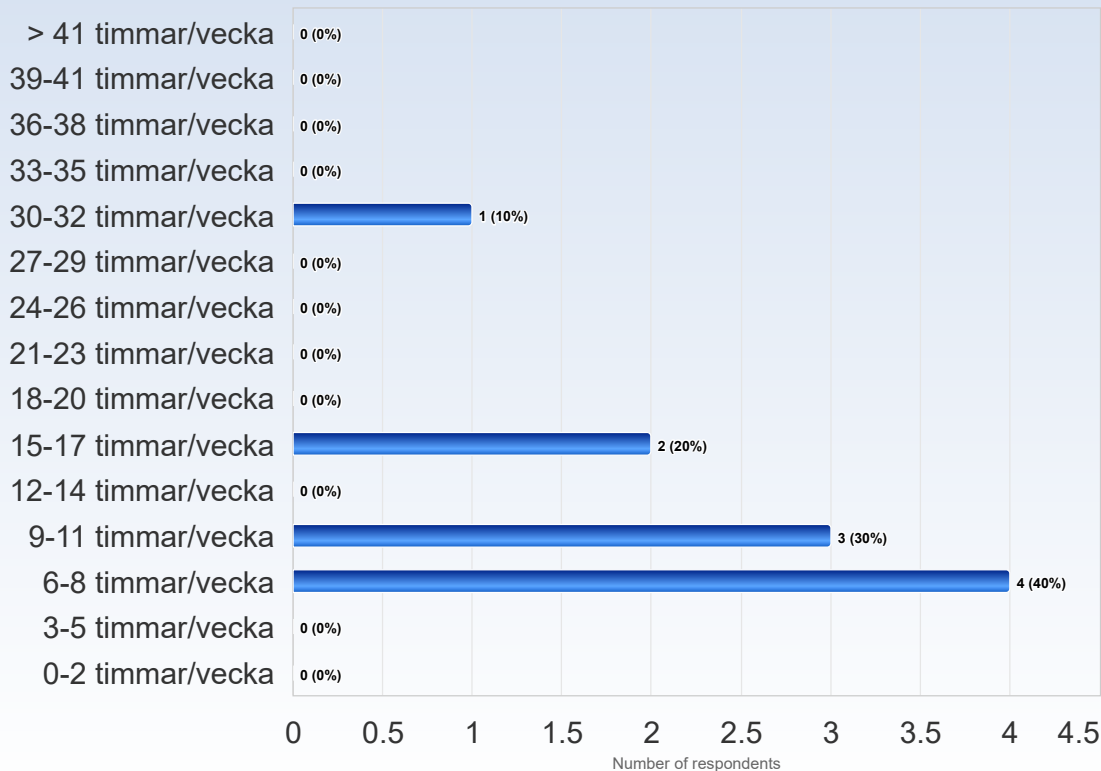
Antal respondenter: 48

Antal svar: 13

Svarsfrekvens: 27,08 %

ESTIMATED WORKLOAD

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



Comments

Comments (I worked: 6-8 timmar/vecka)

pretty light course. good amount of workload

Comments (I worked: 15-17 timmar/vecka)

Average workloads

Comments (I worked: 30-32 timmar/vecka)

very good to have exercise course and I hope we can have another discuss course with teacher every week, for example 1 hour for those advanced student to talk with TAs. You know, the nonlinear course have sufficient materials to learn, even in the material taught in class there are lots of questions to ask, but professor does not have time to answer.

LEARNING EXPERIENCE

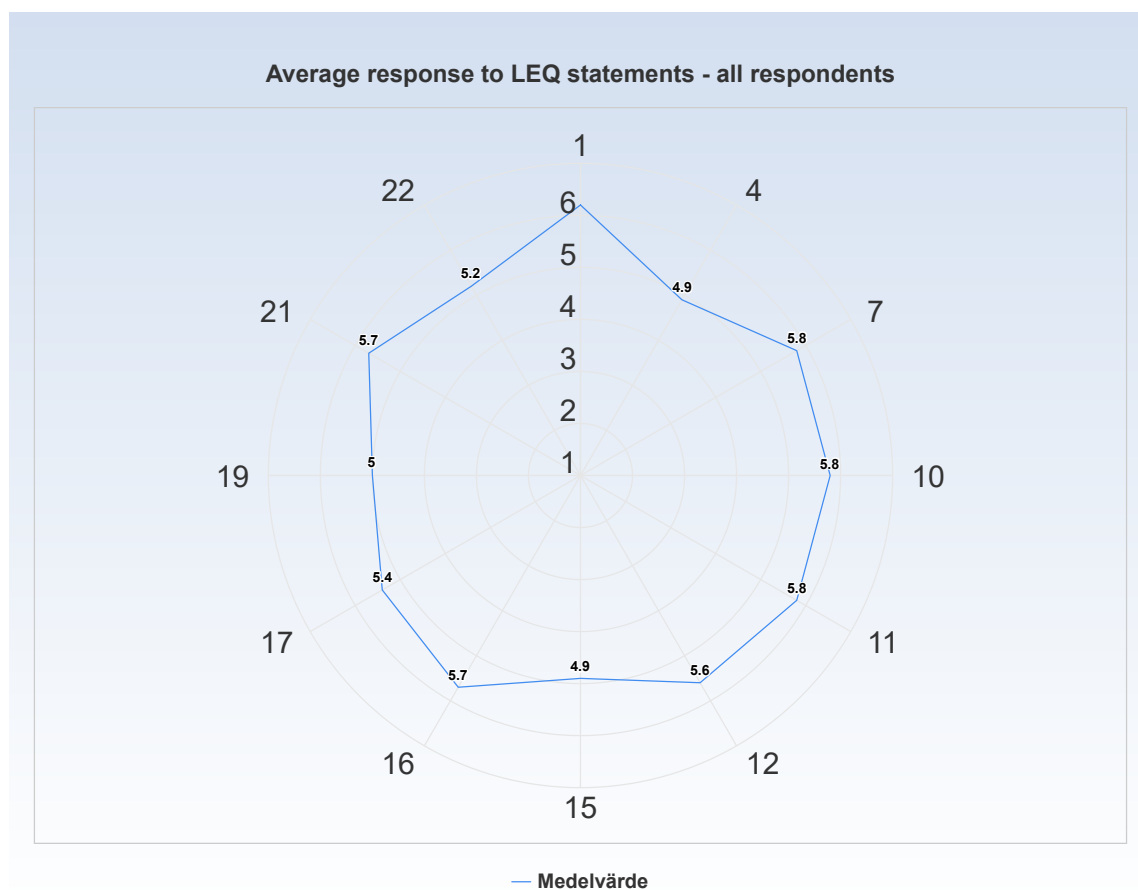
The polar diagrams below show the average response to the LEQ statements for different groups of respondents (only valid responses are included). The scale that is used in the diagrams is defined by:

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.



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.

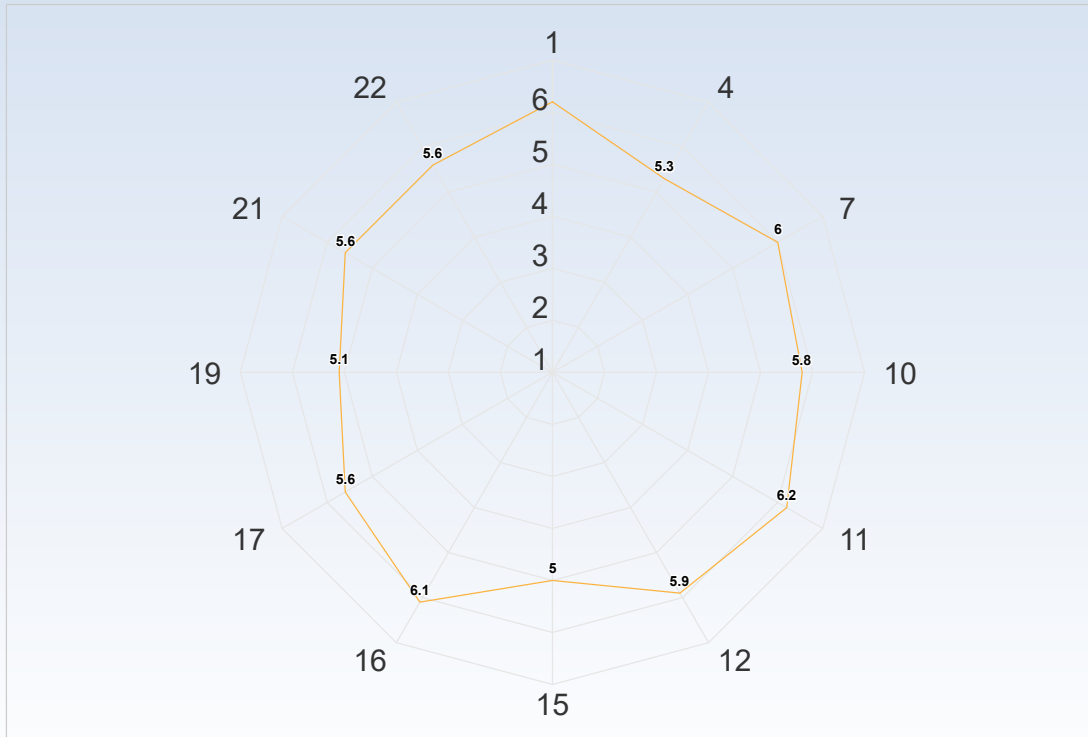
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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.

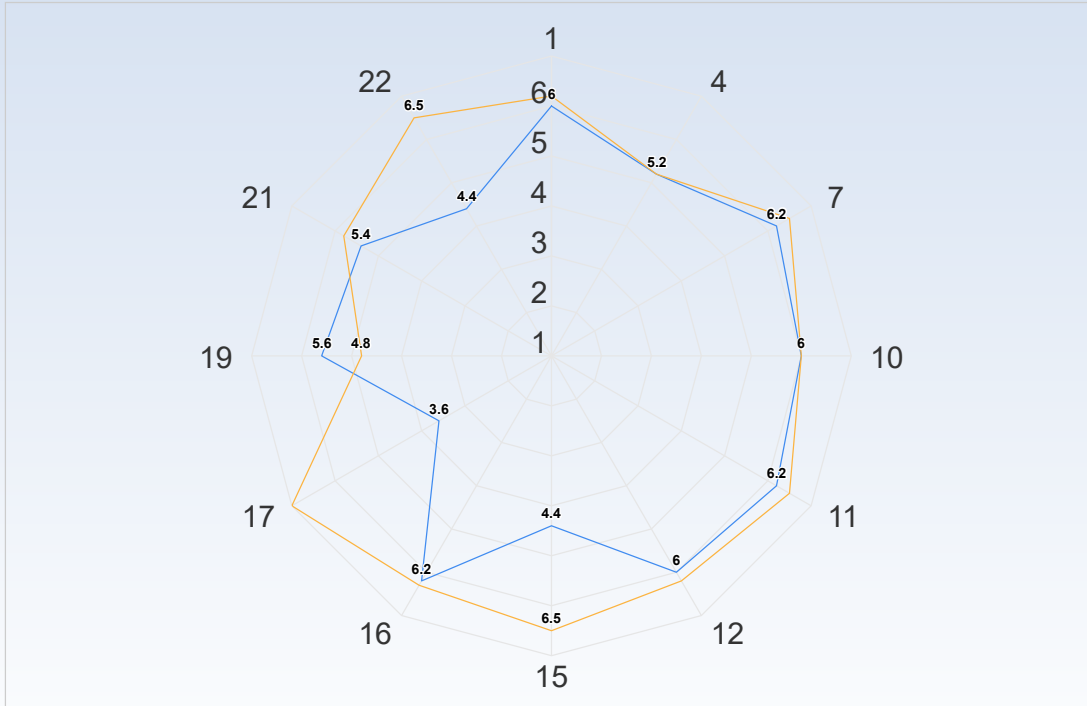
Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.

Average response to LEQ statements - per gender



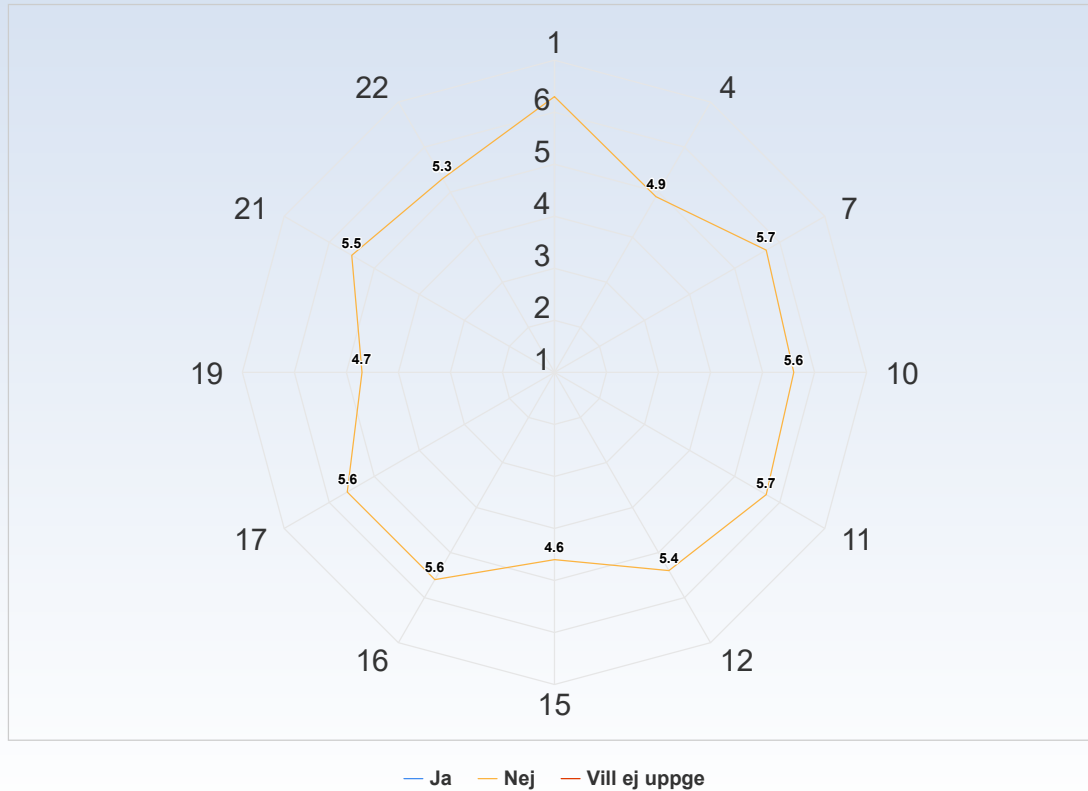
— Kvinna — Man — Annat — Vill ej uppge

Average response to LEQ statements - per type of student



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

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: 6-8 timmar/vecka)

Hands-on projects

the theory and homework

We learnt many different and interesting techniques for controlling nonlinear systems. The course website was well designed and resourceful.

What was the best aspect of the course? (I worked: 9-11 timmar/vecka)

The best aspect of the course are module 2 and 4. There are very interesting.

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

The different assignments were really interesting and focused on different parts of the course. This helps a lot to understand the prerequisites for the exam and also to stay on track during the course.

What was the best aspect of the course? (I worked: 30-32 timmar/vecka)

exercise course

What would you suggest to improve?

What would you suggest to improve? (I worked: 6-8 timmar/vecka)

Due to the course's exploratory nature and wide range of topics having it earlier in the master program would mean it could be used to find what topics you'd want to delve into deeper during your education.

Real life examples / videos of these control techniques in action.

What would you suggest to improve? (I worked: 9-11 timmar/vecka)

For some assignments, I think it would be preferable to detail in certain questions what is expected more precisely.

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

It could be nice to implement a nonlinear controller during a lab.

What would you suggest to improve? (I worked: 30-32 timmar/vecka)

very good to have exercise course and I hope we can have another discuss course with teacher every week, for example 1 hour for those advanced student to talk with TAs. You know, the nonlinear course have sufficient materials to learn, even in the material taught in class there are lots of questions to ask, but professor does not have time to answer.

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)

prepare for the nonlinear system

Go through the Nyquist Stability Criterion videos by Brian Douglas on Youtube

What advice would you like to give to future participants? (I worked: 15-17 timmar/vecka)

A "compulsory" course if you would like to specialized yourself in control theory.

What advice would you like to give to future participants? (I worked: 30-32 timmar/vecka)

ignore first lessons and pay attention to Lypunov and the following. prepare enough background for state space control and vector function

SPECIFIC QUESTIONS

RESPONSE DATA

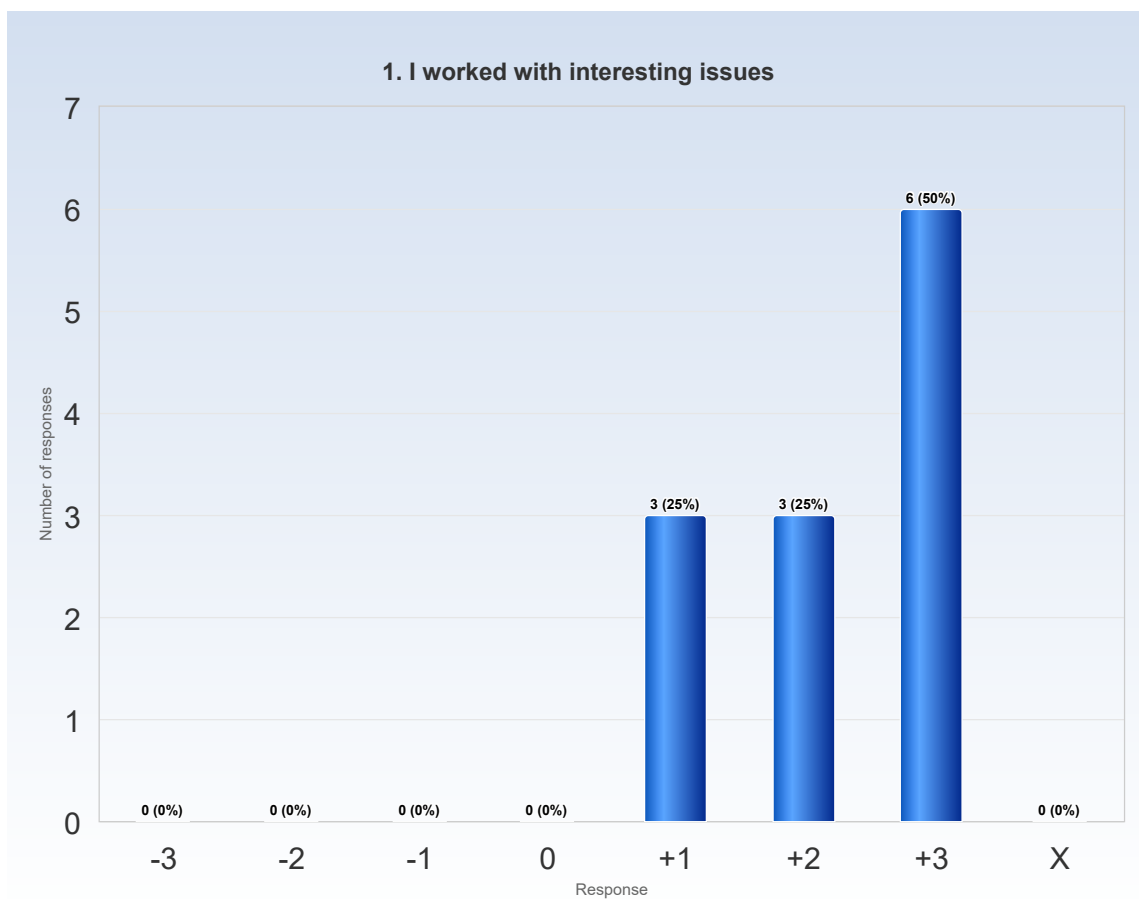
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

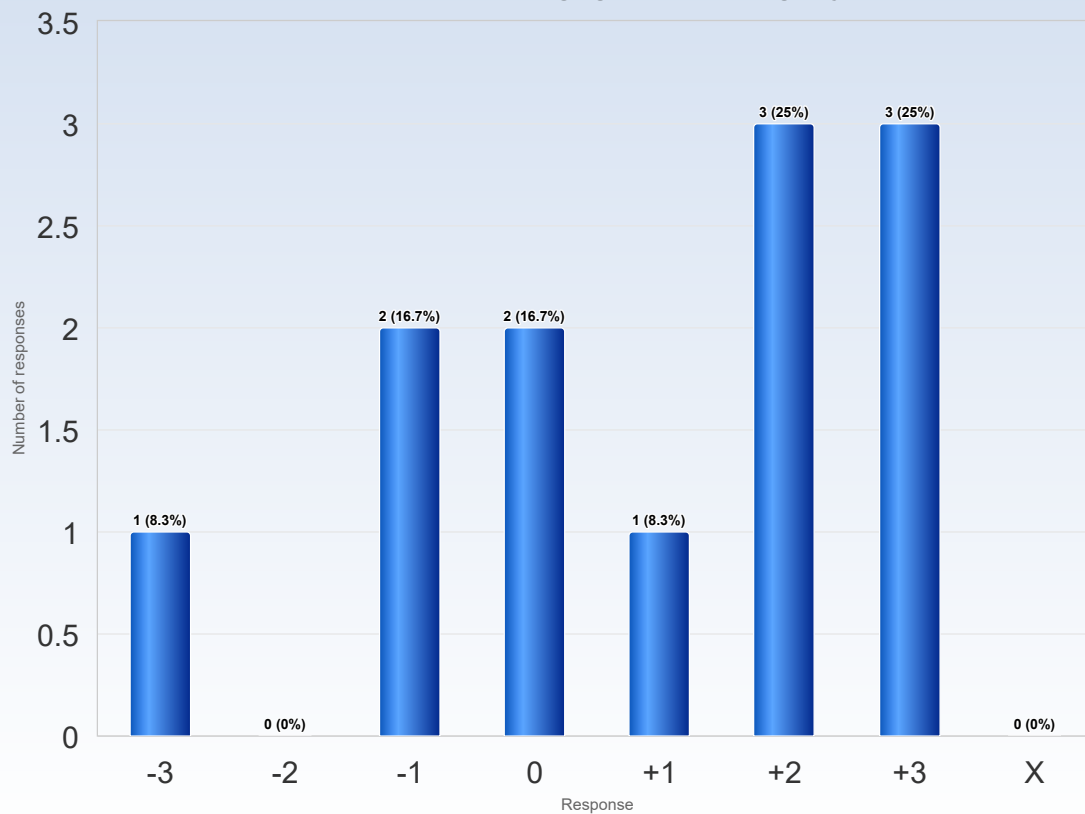
0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



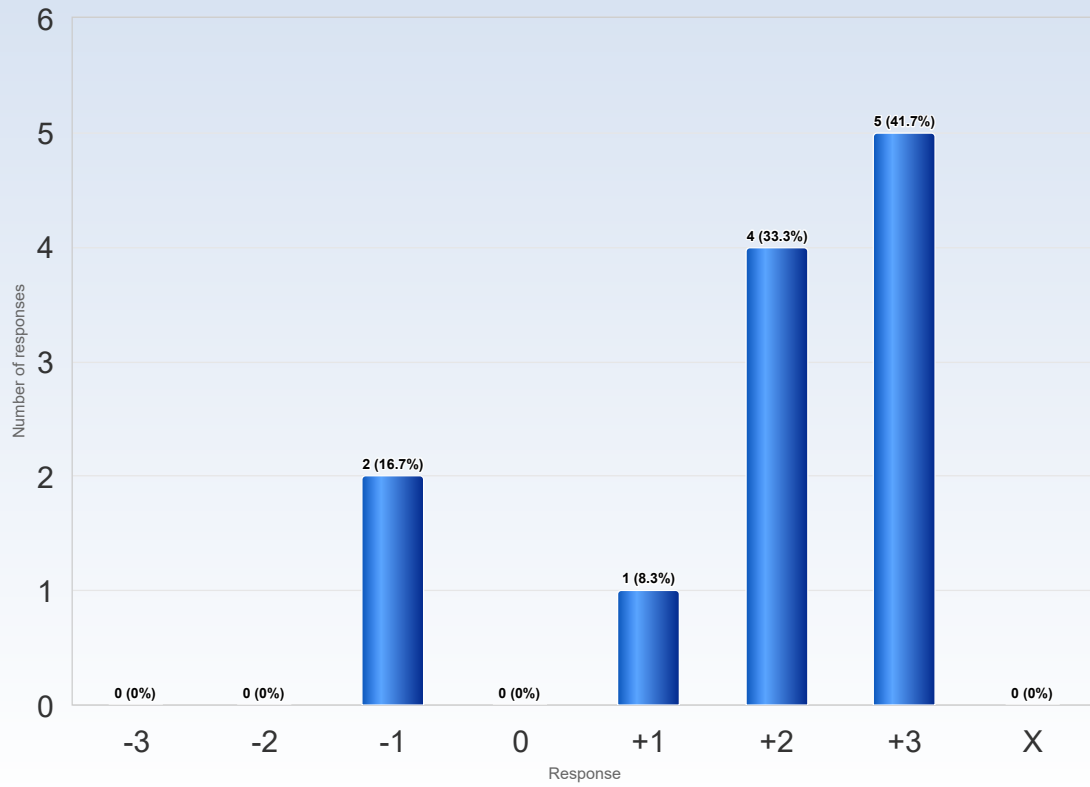
4. The course was challenging in a stimulating way



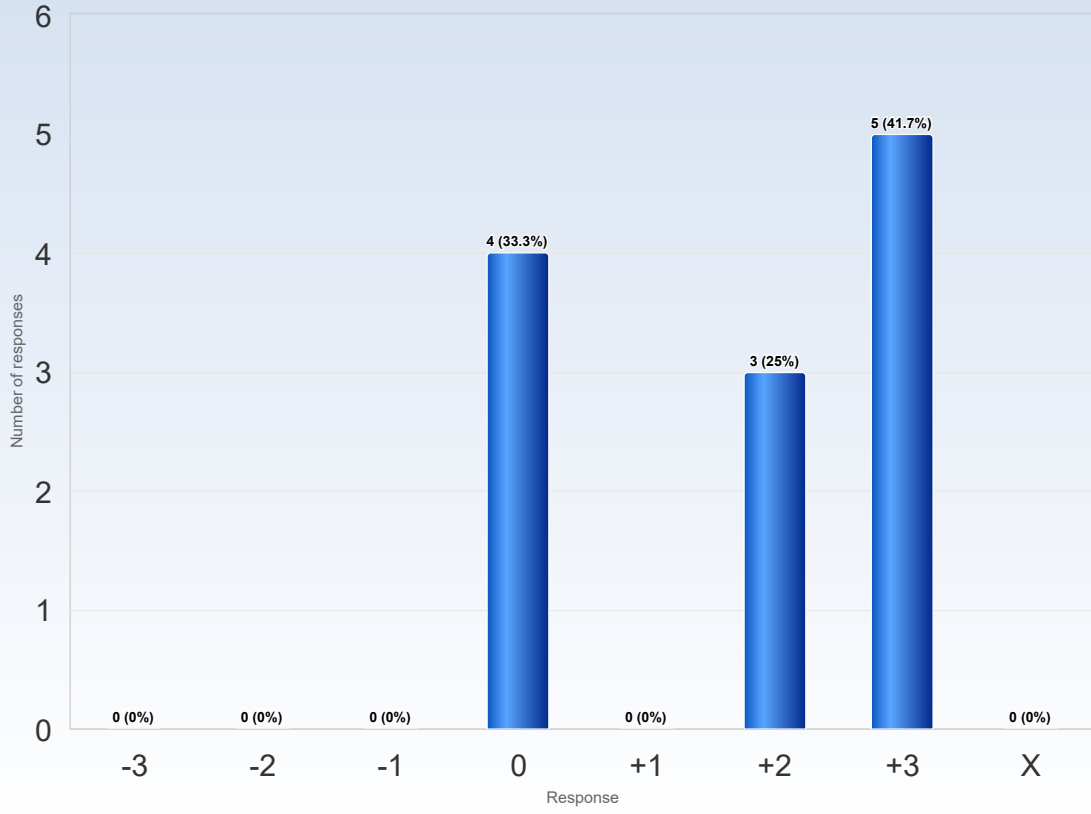
Comments

Comments (My response was: -3)
Stressful

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



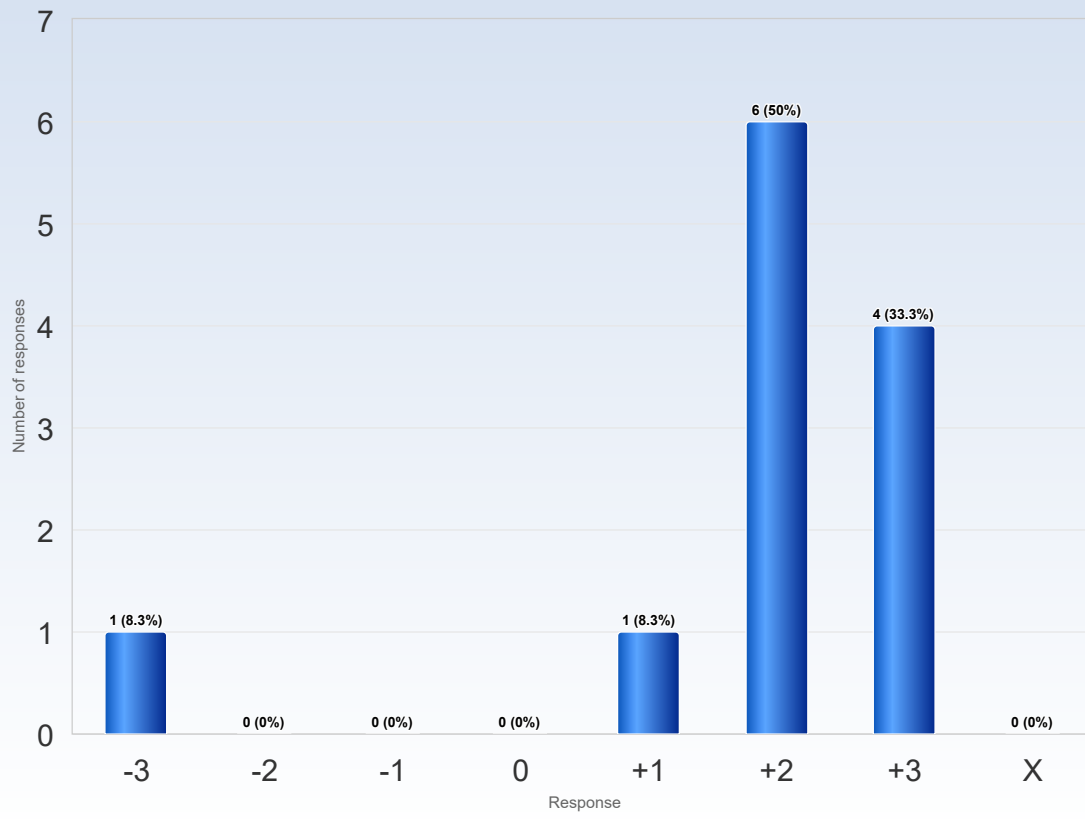
10. I was able to learn from concrete examples that I could to relate to



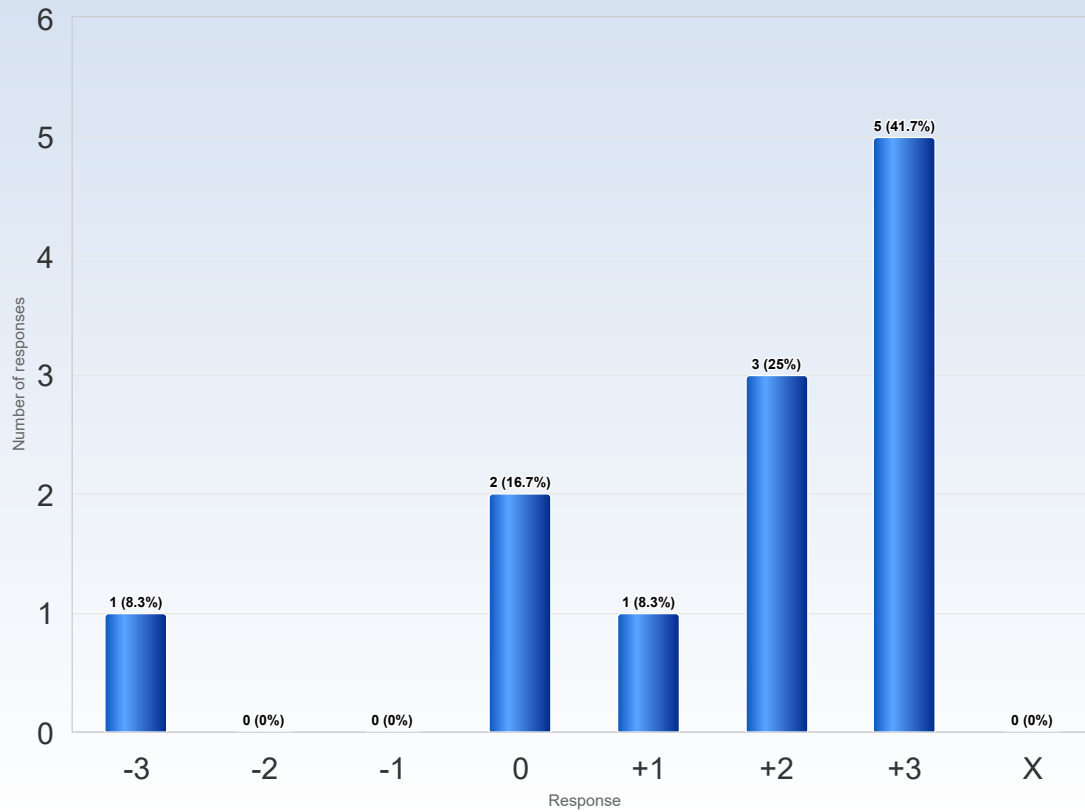
Comments

Comments (My response was: 0)
Sometimes

11. Understanding of key concepts had high priority



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

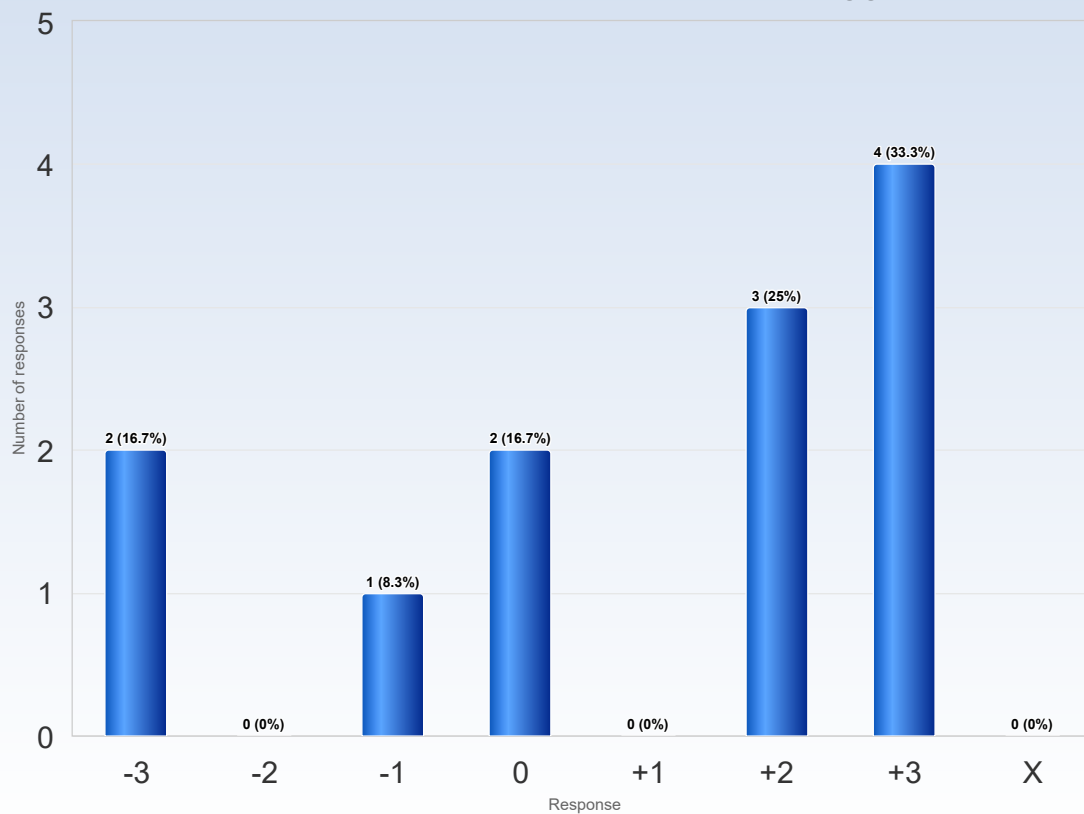


Comments

Comments (My response was: -3)

Most of the valuable time was the outside time. You had to well-prepared for everything, which is reasonable. Though for the lectures in which the TA filled in for Elling, you had to know everything before arriving, which sort of defeated the purpose of going. He wasn't good at explaining anything, barely even the concept I was familiar with before class. But he was nice!

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

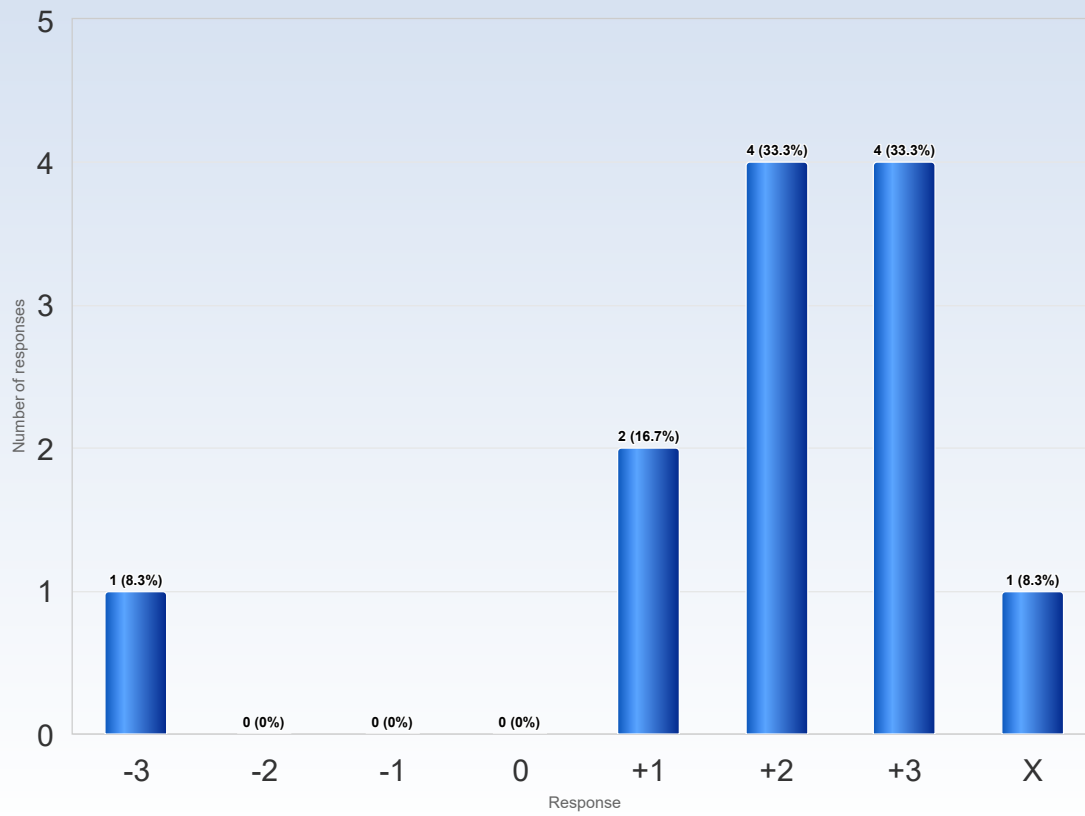


Comments

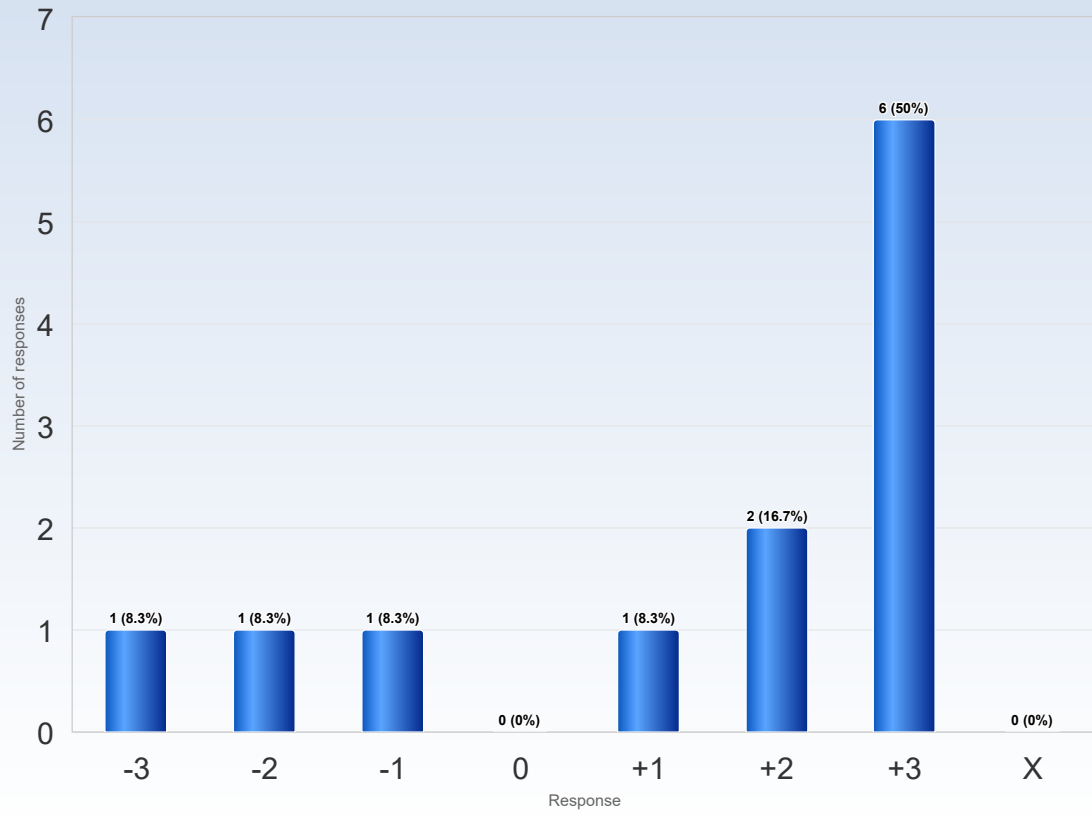
Comments (My response was: -3)

The only opportunity to practice was during the exercises and even though some of them were great, others created a climate where it was difficult to ask questions. For example the female teacher was a bit obnoxious to a student that didn't understand her explanation, so I didn't want to ask any questions then either.

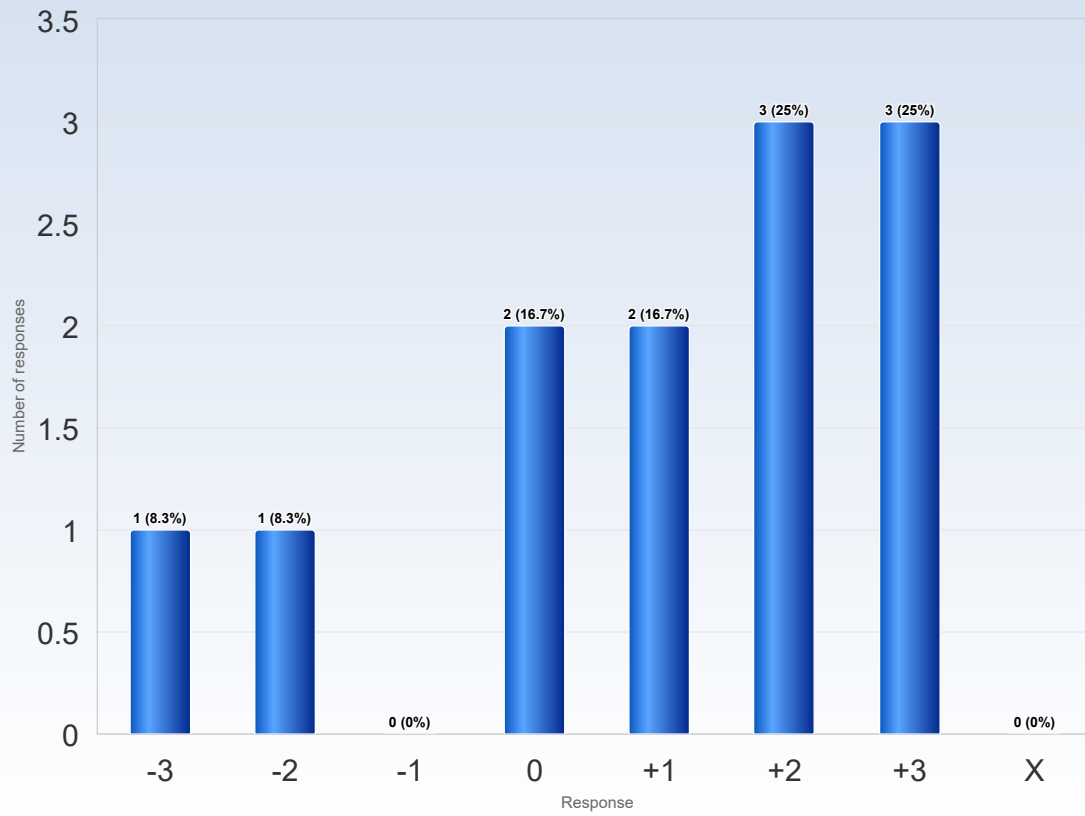
16. The assessment on the course was fair and honest



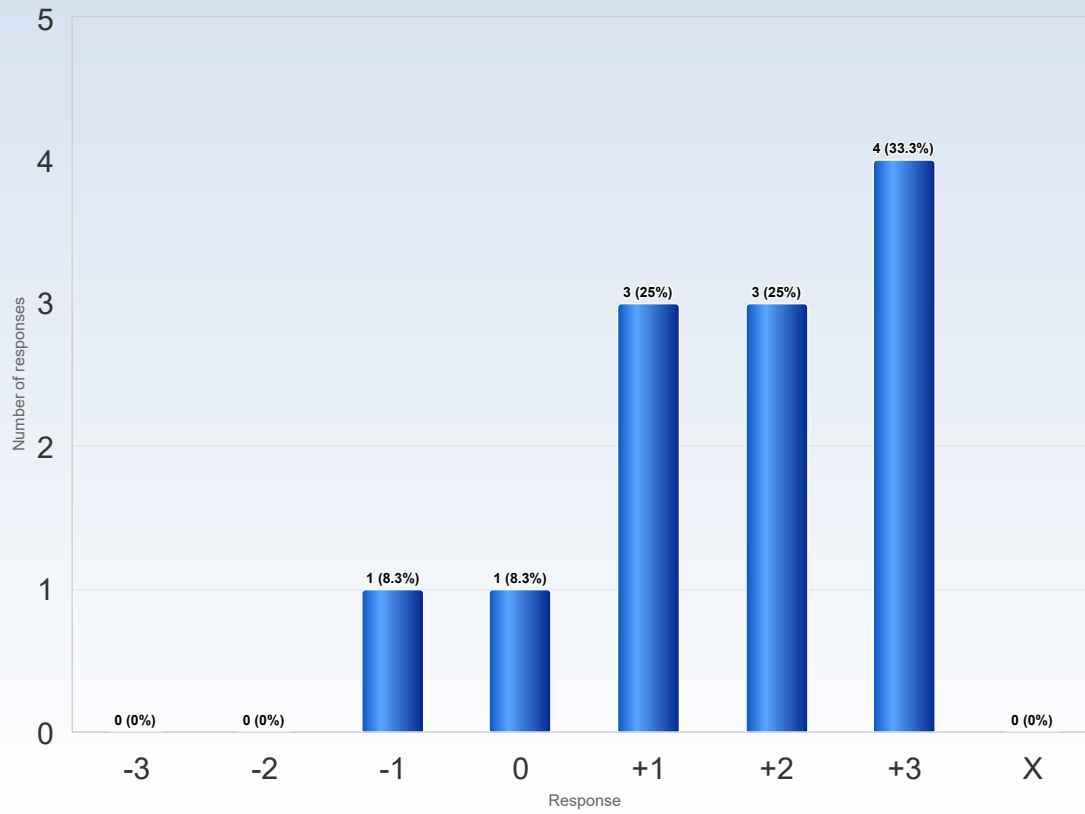
17. My background knowledge was sufficient to follow the course



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

