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## Report - EQ2820 - 2020-09-29

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

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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):**

Magnus Jansson (janssonm@kth.se)

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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.**

A standard LEQ course evaluation was published after the course during the period 2020-06-07 - 2020-06-20. We received responses from 3 out of 4 possible.

During the course we promoted students several times to contact us by email or by using the discussion functionality in Canvas in case of questions or concerns.

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**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.)**

No particular meetings. See further above.

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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.**

Course organization:

\* 9 meetings in class: 9\*2h

\* 9 sets of homework problems

Requirements: Individual solutions to homework problems, active participation. Preliminary grading for the masters level course will be: E=60%, D=65% , C=70%, B=80%, A=90% of max score.

The course runs in two version one for Master and one for PhD students (see FEM3220).

This year, the course was fully converted to an online course due to the Covid-19 situation. Half of the lectures were given live in Zoom while the other half used recorded video-lectures/presentations made available on the Canvas page. Student homework solutions and grading were handled by assignments in Canvas.

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**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?**

The workload is deemed to be appropriate. It depends on the student's background and level of ambition.

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#### **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?**

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We had 6 students from the beginning, 2 dropped the course quite early, 4 completed the course, 3 with A grade and 1 with B grade.

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#### **STUDENTS' ANSWERS TO OPEN QUESTIONS**

**What does students say in response to the open questions?**

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See attached LEQ.

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#### **SUMMARY OF STUDENTS' OPINIONS**

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

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Questions 10, (15), 19, 21 were given the lowest scores; we need to think of if this is something we can influence in future offerings by changes

in the course design or by other means. The lower scores on these questions are quite expected given the current course design and the covid-19 situation.

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#### **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.**

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We are quite happy with how we managed to deliver the course in this new circumstance. The results achieved by the students completing the course were good, and received feedback from the students are in most respects positive.

Student quote from the LEQ: "Thank you for the course, i really enjoyed it!"

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#### **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?

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See above. We also have very few students and responses.

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#### **PRIORITIZED COURSE DEVELOPMENT**

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

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See possible changes in the course design above. See also the course analysis of the PhD version FEM3220.

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## EQ2820 - 2020-06-06

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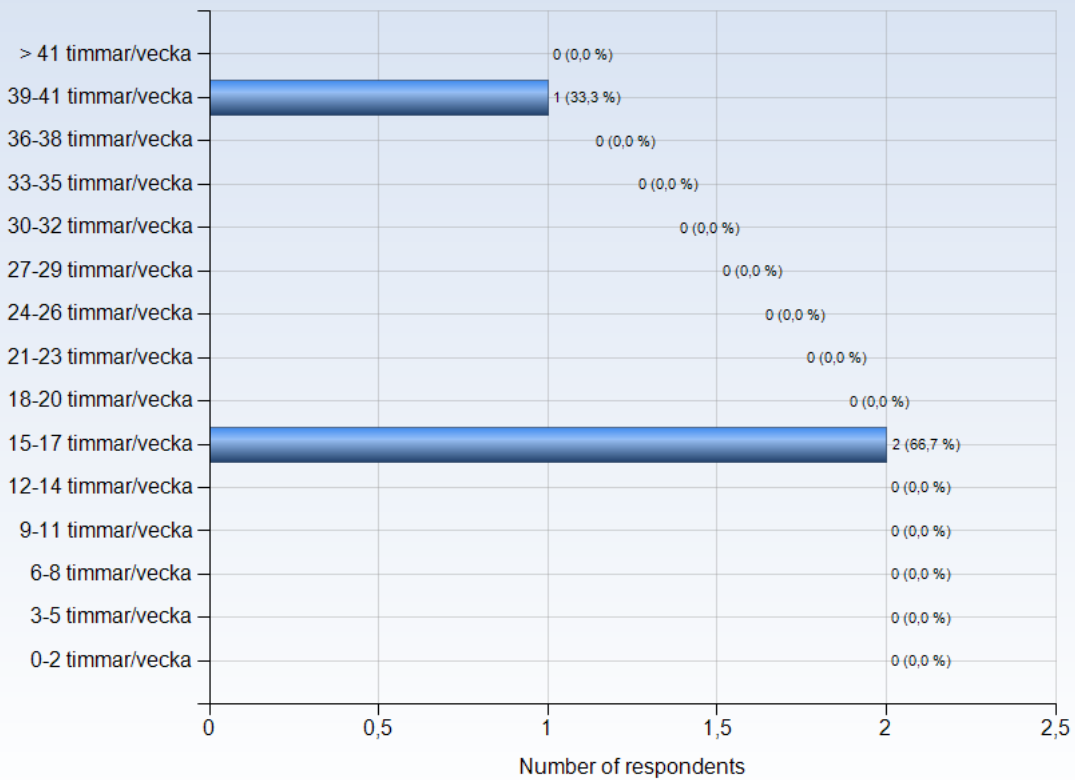
Antal respondenter: 4  
Antal svar: 3  
Svarsfrekvens: 75,00 %

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## ESTIMATED WORKLOAD

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



### Comments

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

2h for the lecture, around 10 hours to read the book and 4 hours to do the homework

Comments (I worked: 39-41 timmar/vecka)

I had bought the book a long time ago but never felt i had time to read it so i really enjoyed being able to do so in a course. Consequently i spent alot of time reading it and it was even better than what i had heard about it.



## LEARNING EXPERIENCE

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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:

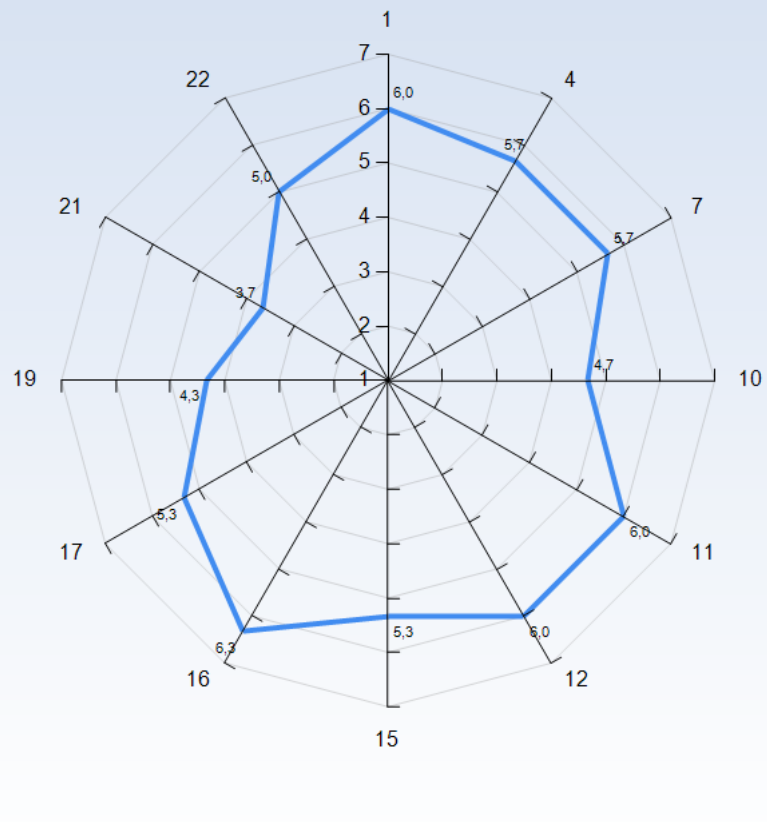
1 = No, I strongly disagree with the statement

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.

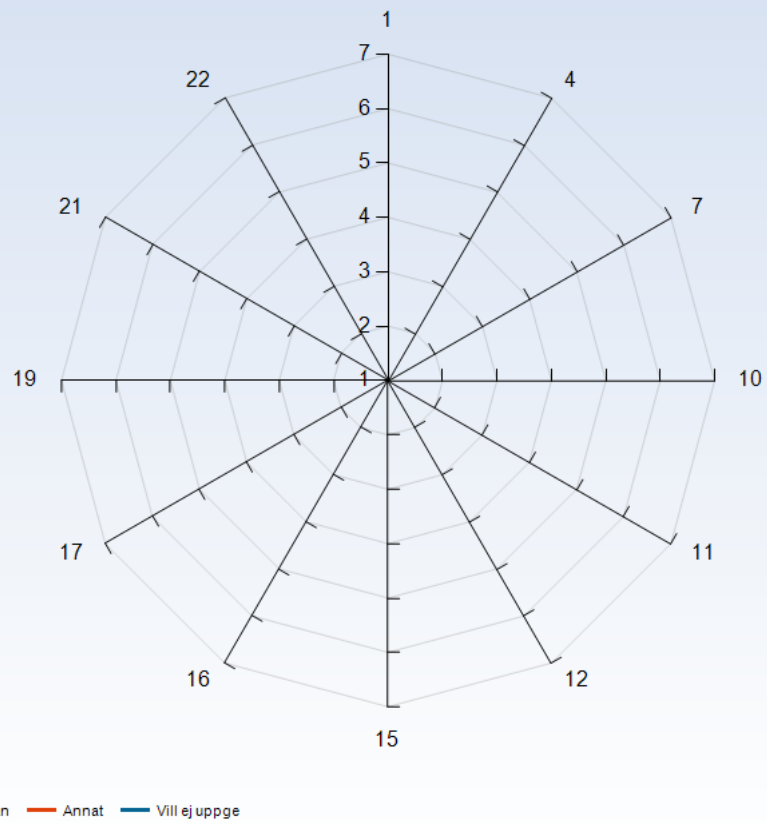
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

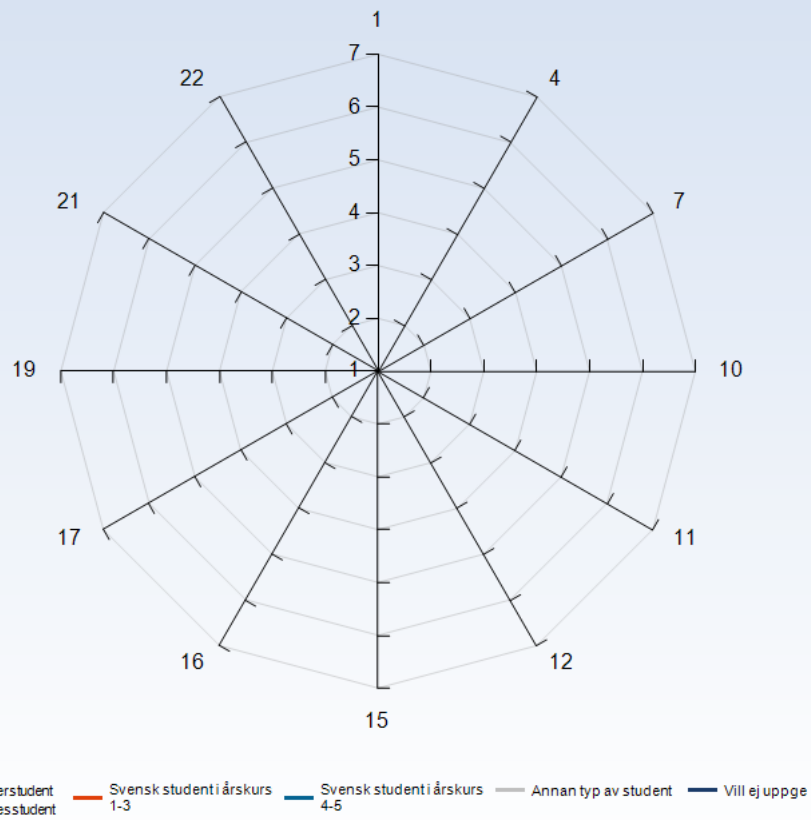


#### Comments

Comments (I am: Man)

Irrelevant

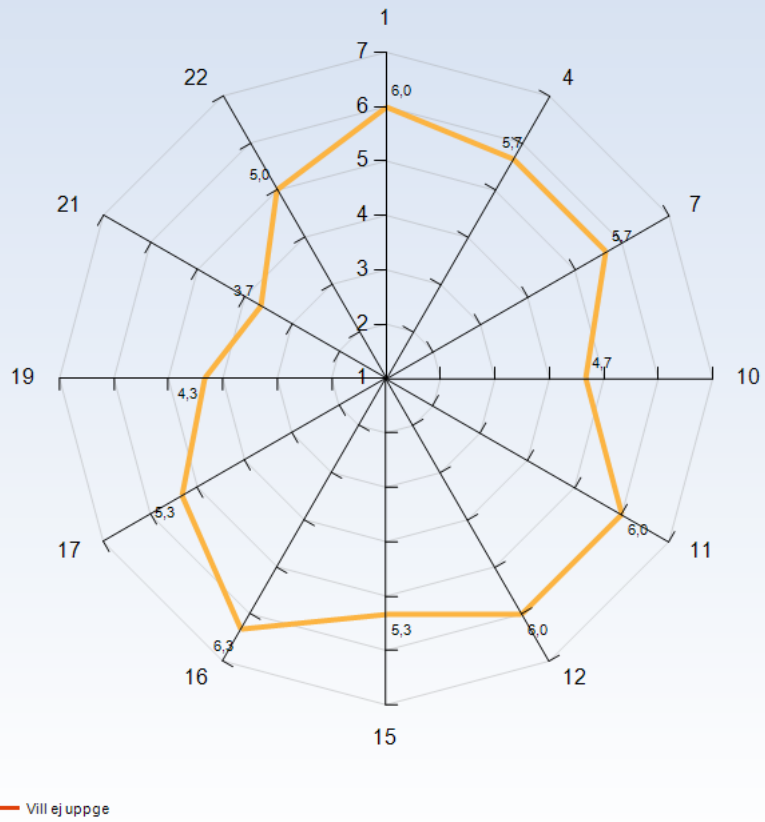
### Average response to LEQ statements - per type of student



#### Comments

Comments (I am: Svensk student i årskurs 4-5)  
 The material is not too advanced

### Average response to LEQ statements - per disability



Comments



## GENERAL QUESTIONS

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### What was the best aspect of the course?

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

There were a lot of material covered which gave a general view on what was possible to do with matrices and in which situation it is an interesting concept

I feel like I finally understand linear algebra.

What was the best aspect of the course? (I worked: 39-41 timmar/vecka)

The book is amazing and the instructors made good lectures given the circumstances. Homeworks like these are really the best way to aid me in processing the material for this type of course.

### What would you suggest to improve?

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

I think a kind of final exam could be good. Personnaly I did every exercise but I relized that the week after I had already lost some key insights. But maybe it is because it was more master/doctorate program and that the goal was more to give a lot of material rather than master the material.

Have lectures more often.

What would you suggest to improve? (I worked: 39-41 timmar/vecka)

Unfortunately i have not been able to take any of the graduate signals courses so a small write-up on fourier matrices and perhaps some other core concepts where matrix theory is important would have been interesting to read.

### What advice would you like to give to future participants?

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

Only take this course if you are really interested in mathematics and matrices otherwise it will be too much work

Read the textbook.

What advice would you like to give to future participants? (I worked: 39-41 timmar/vecka)

Make sure to read the book carefully since many consequences of the theorems aren't spelled out; rather the authors seem to have intended that the reader should figure them out from the 'exercices' and problems.

### Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 15-17 timmar/vecka)

It's sad how COVID has messed everything up.

Is there anything else you would like to add? (I worked: 39-41 timmar/vecka)

Thank you for the course, i really enjoyed it!

## SPECIFIC QUESTIONS

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## RESPONSE DATA

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

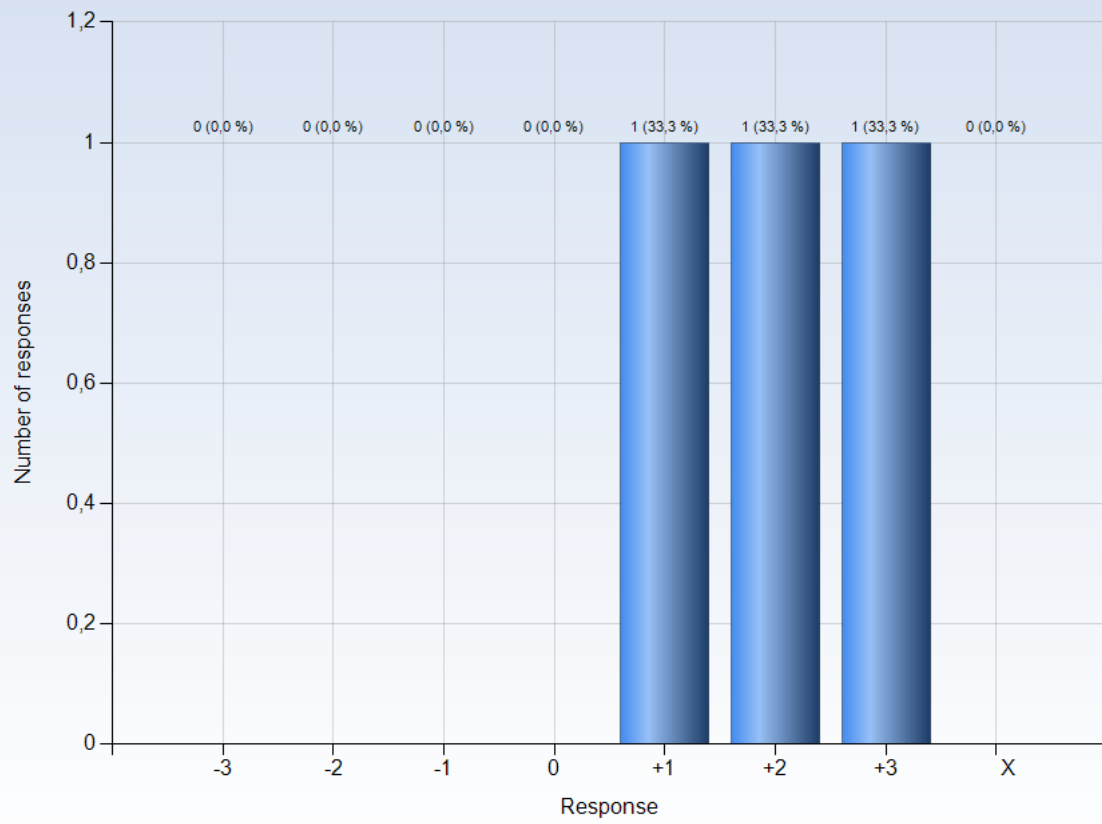
-3 = No, I strongly disagree with the statement

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

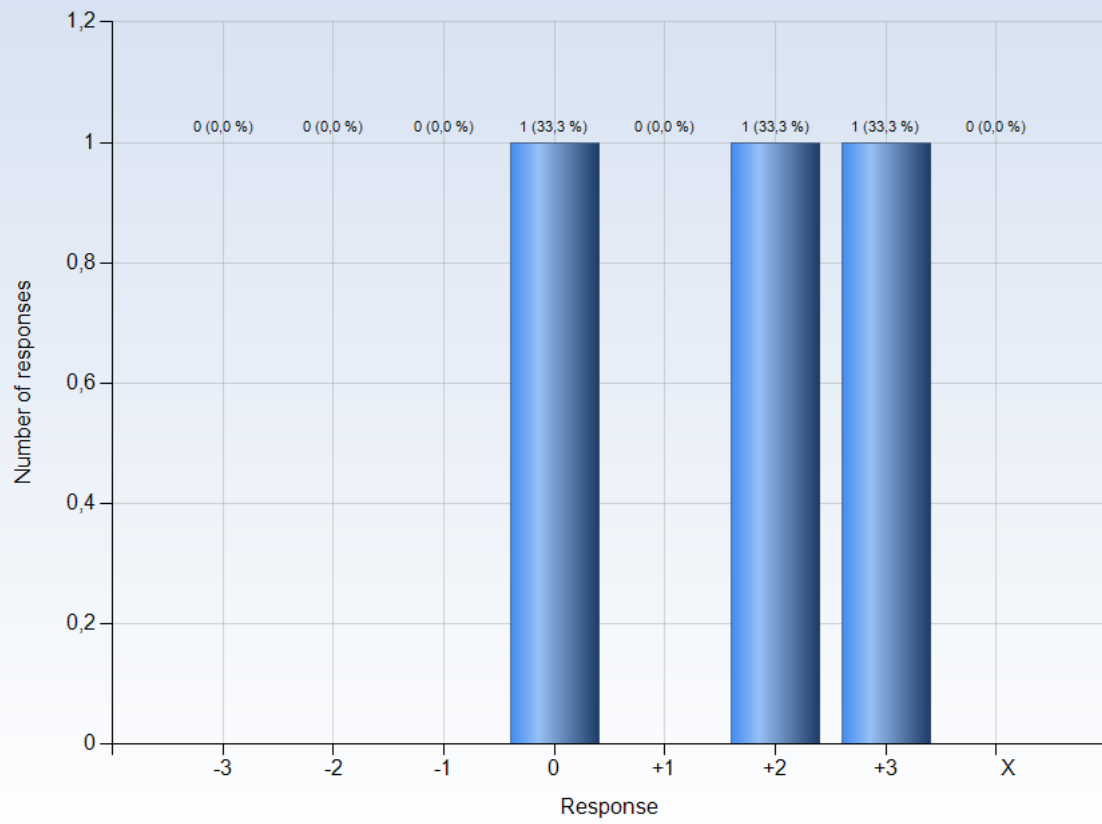
### 1. I worked with interesting issues



Comments

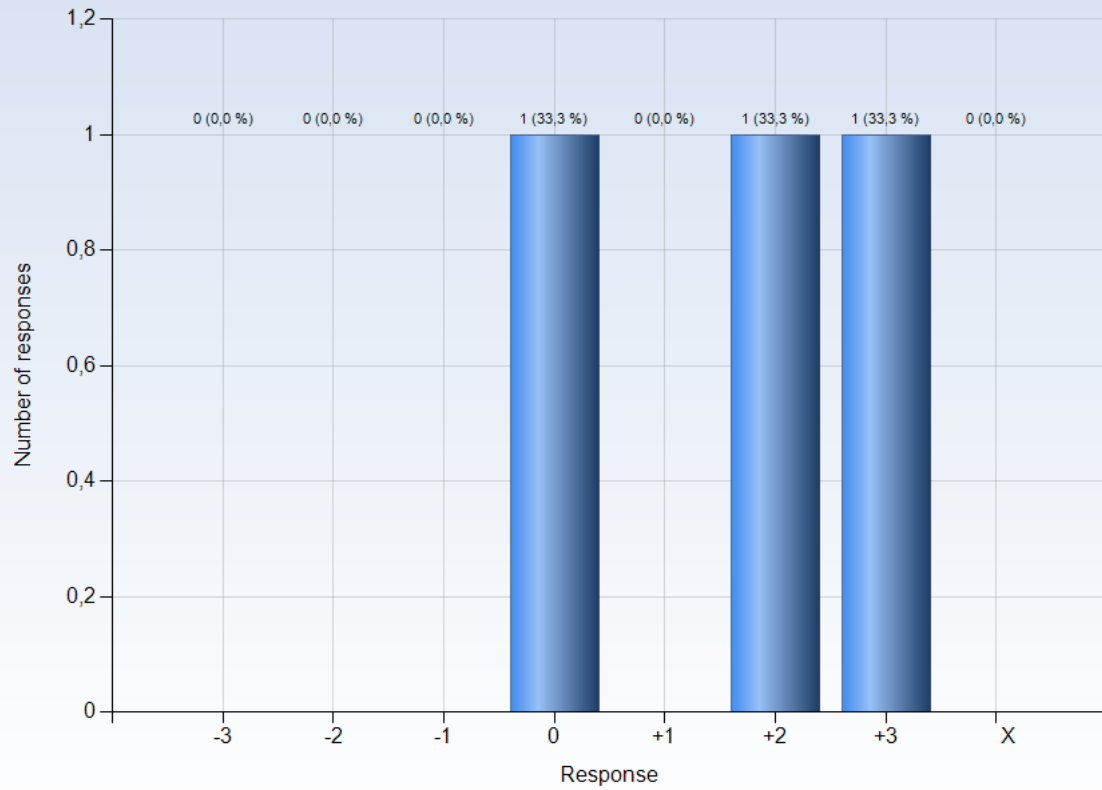


#### 4. The course was challenging in a stimulating way



Comments

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

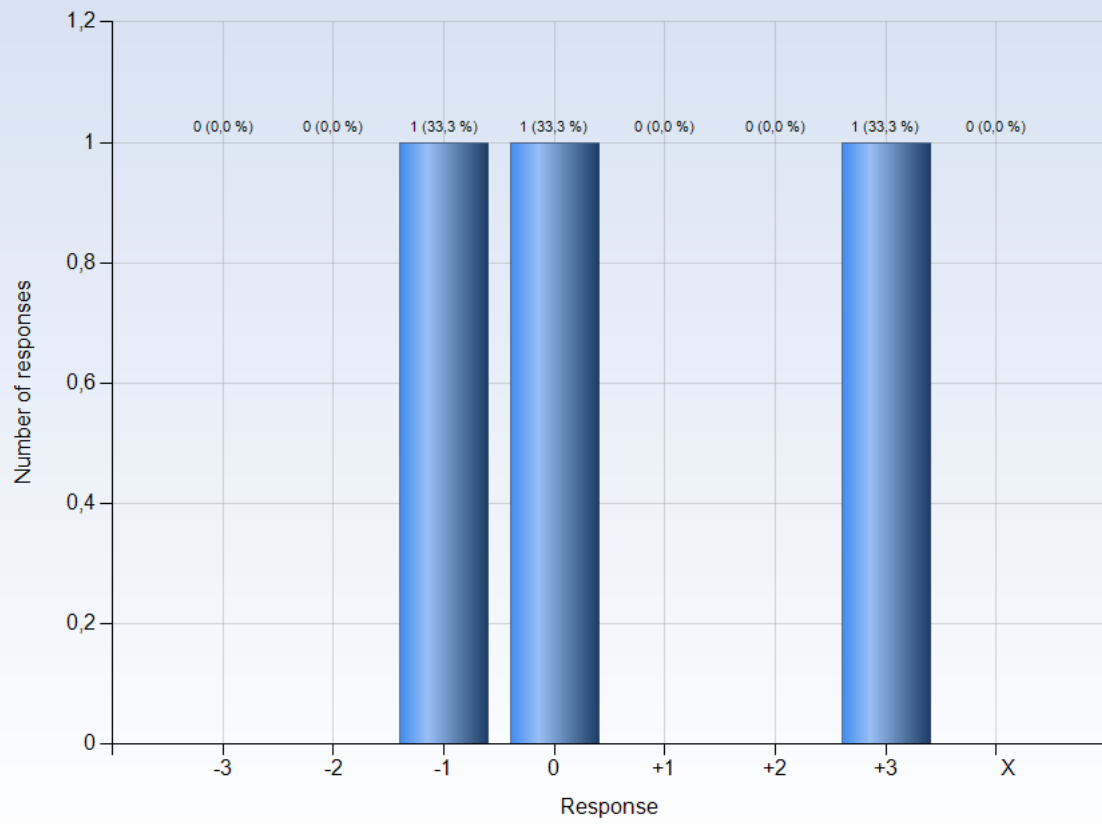


#### Comments

Comments (My response was: 0)

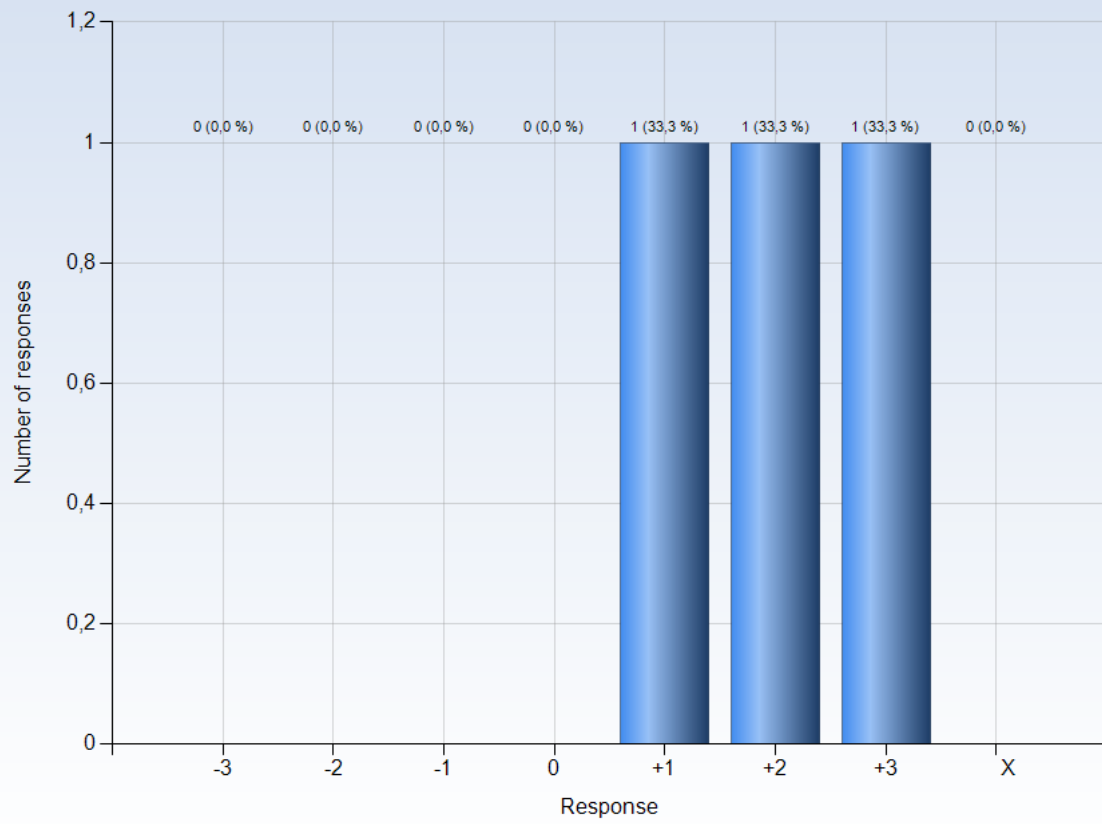
Without a final exam I found it difficult to know what we were expected to know

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



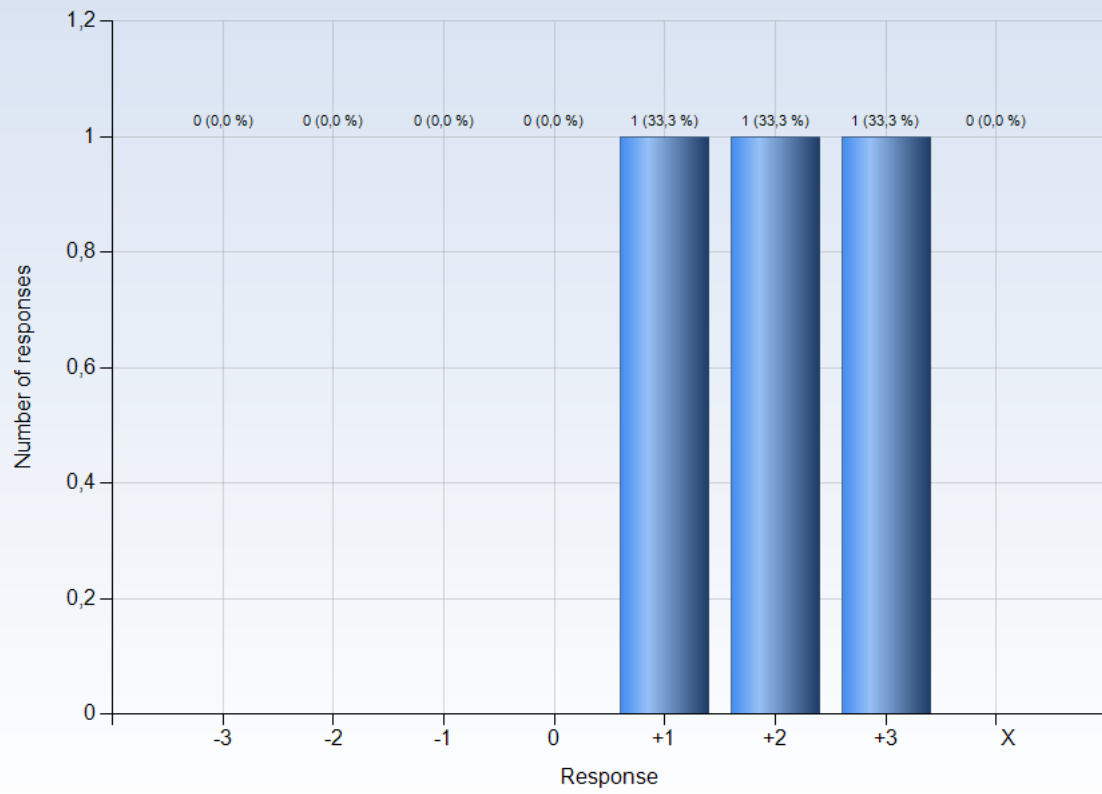
Comments

### 11. Understanding of key concepts had high priority



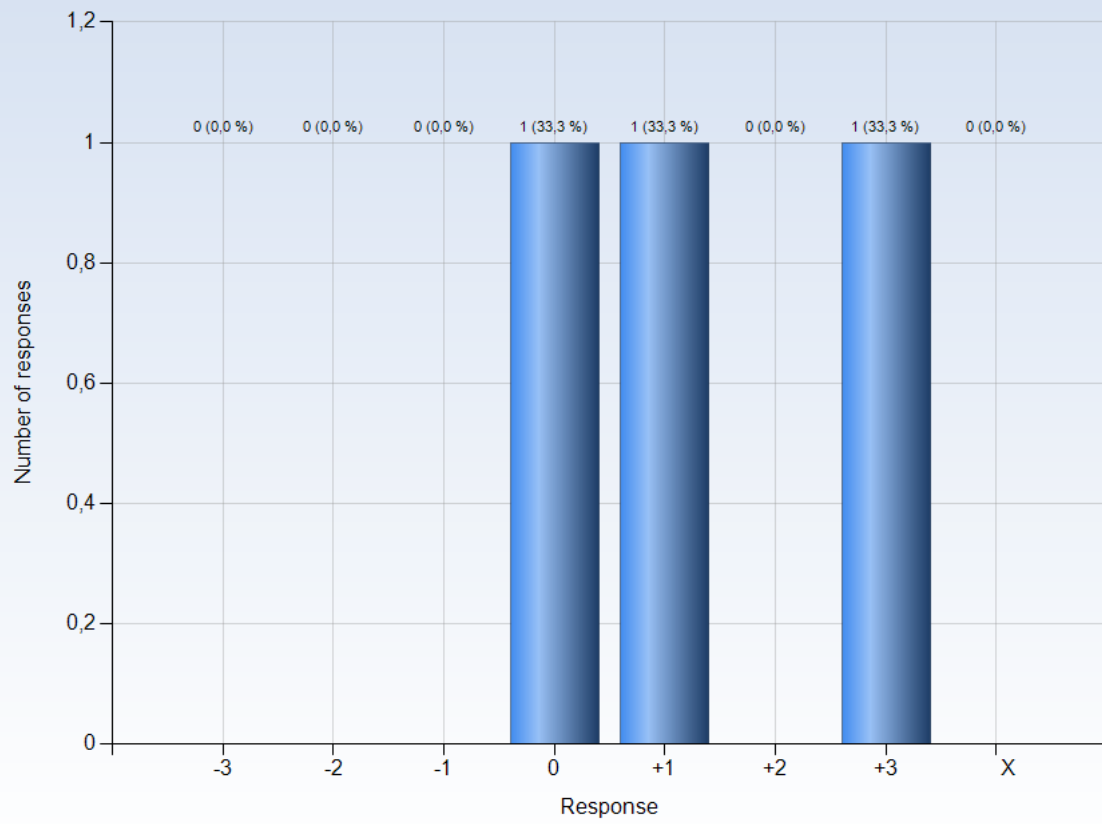
Comments

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



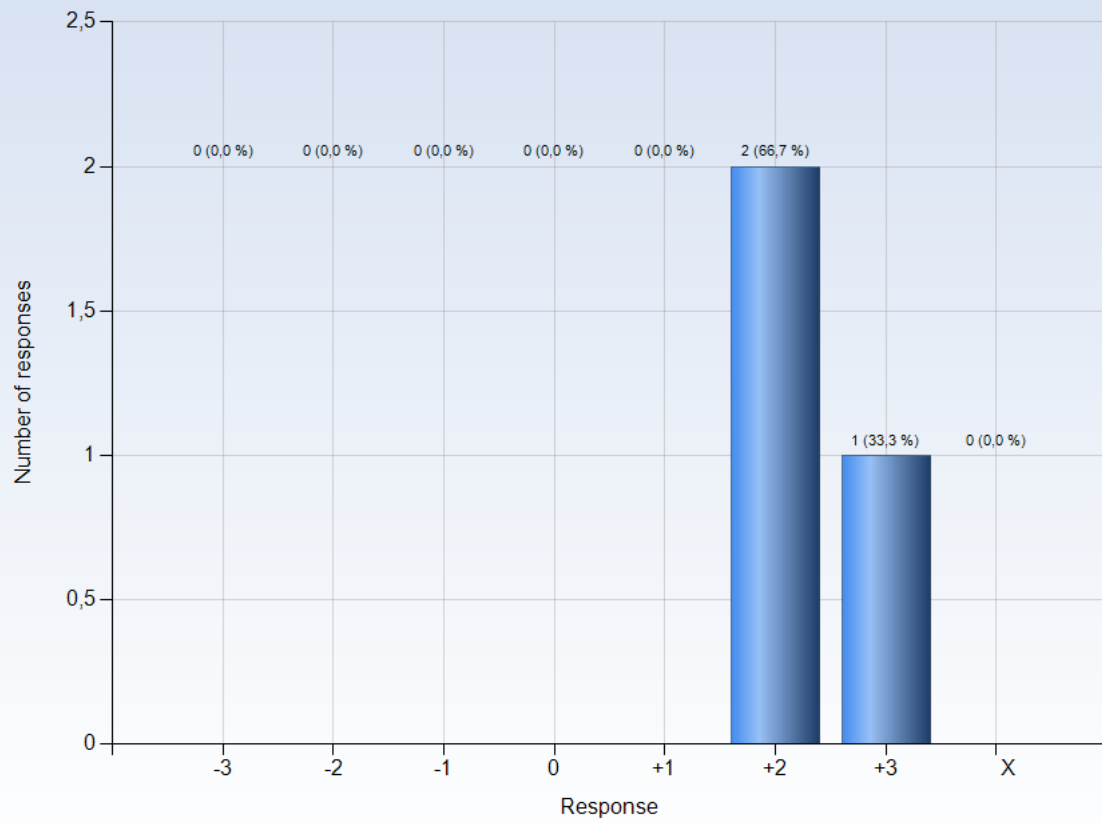
Comments

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



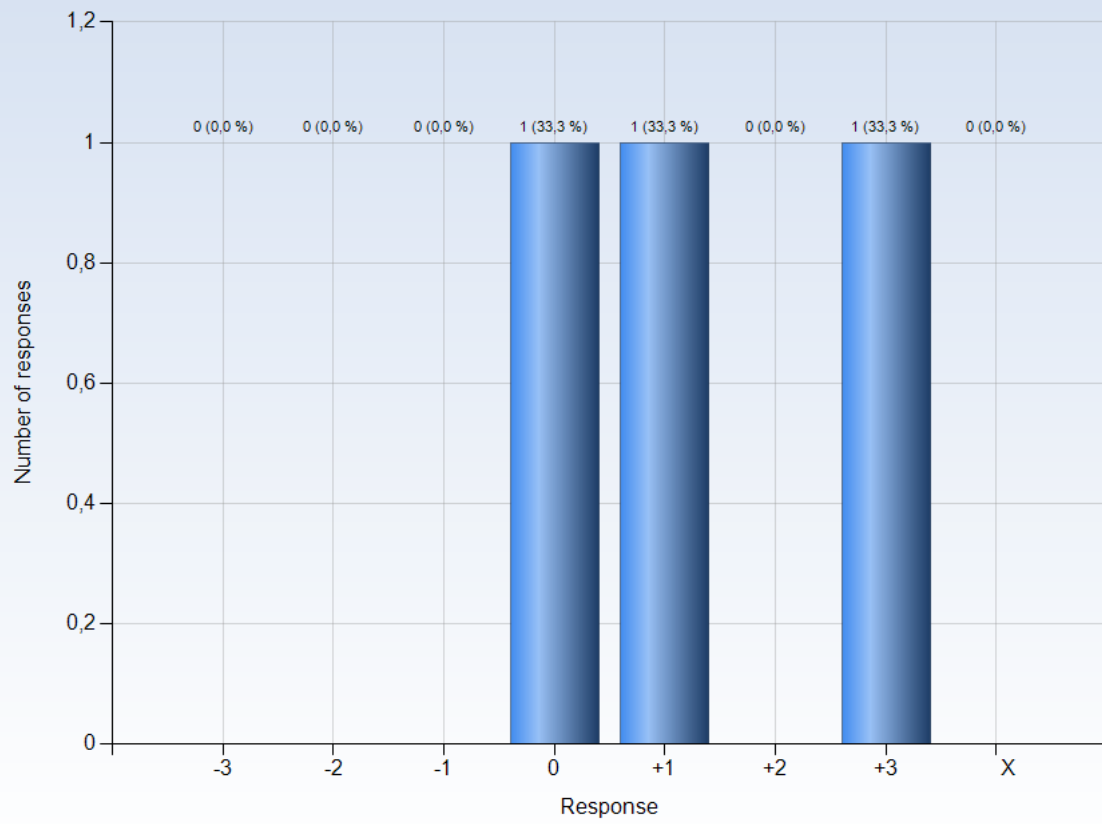
Comments

### 16. The assessment on the course was fair and honest



Comments

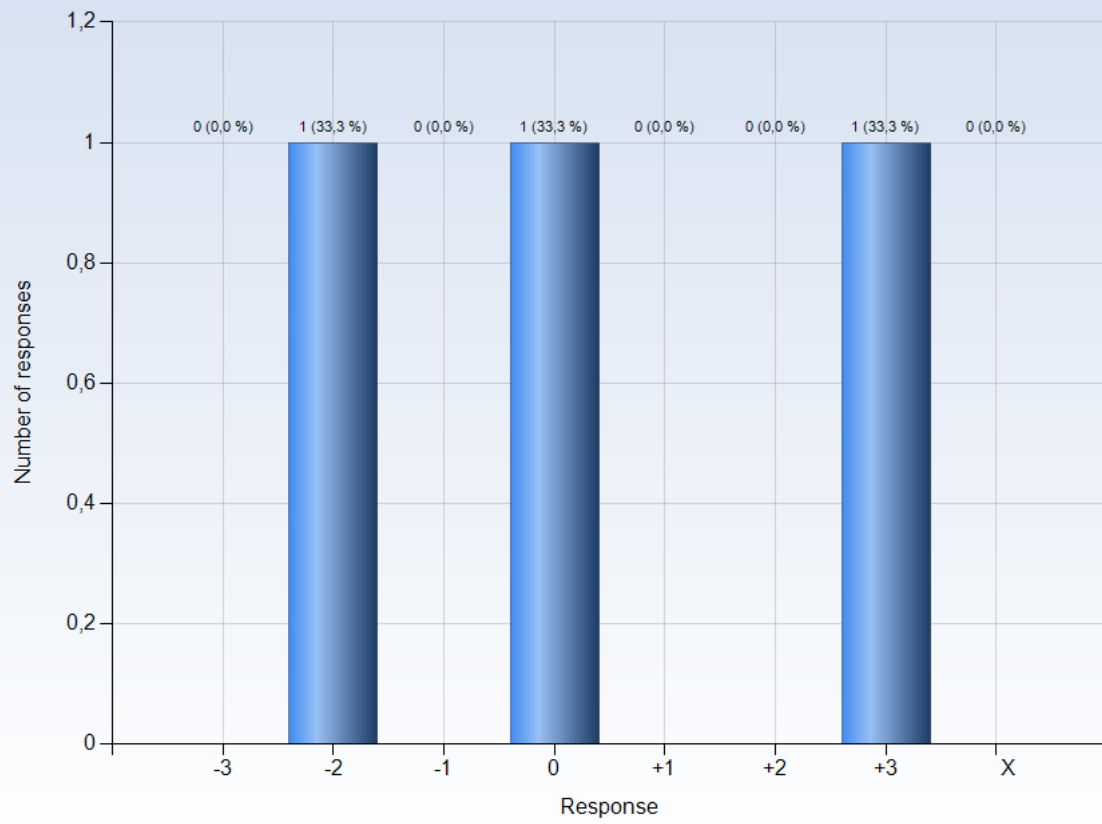
### 17. My background knowledge was sufficient to follow the course



Comments

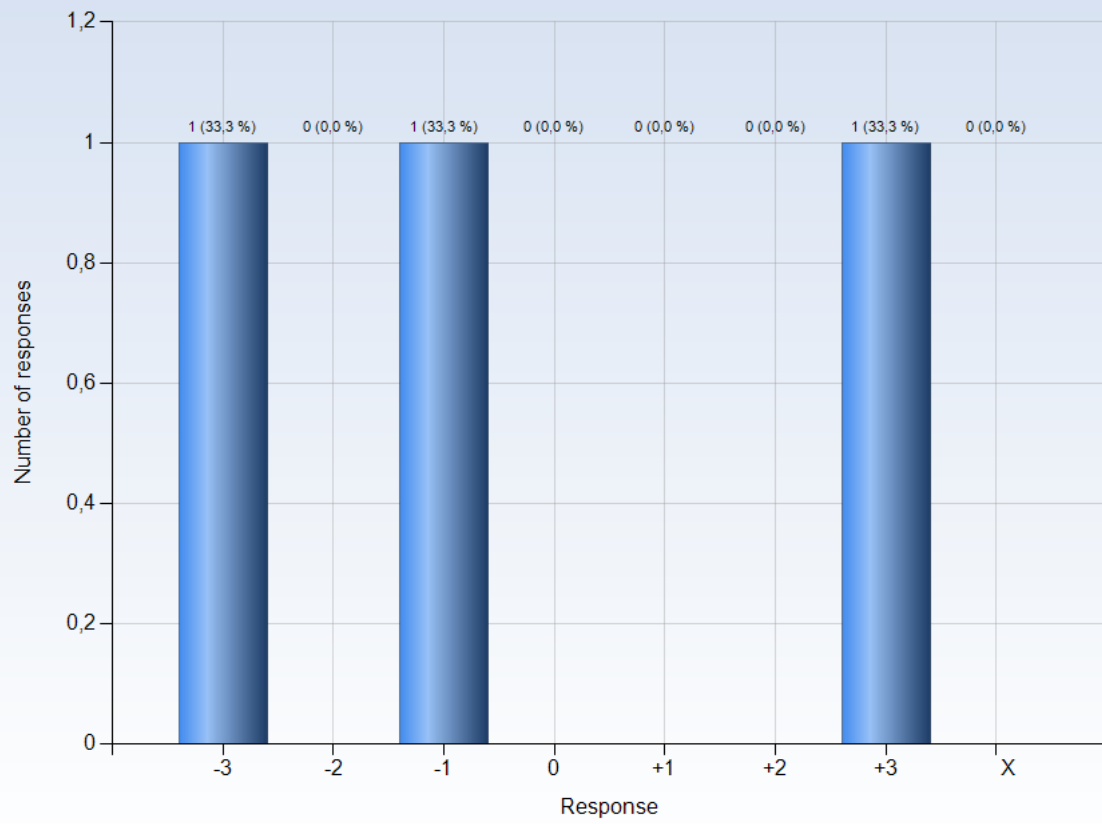


### 19. The course activities enabled me to learn in different ways



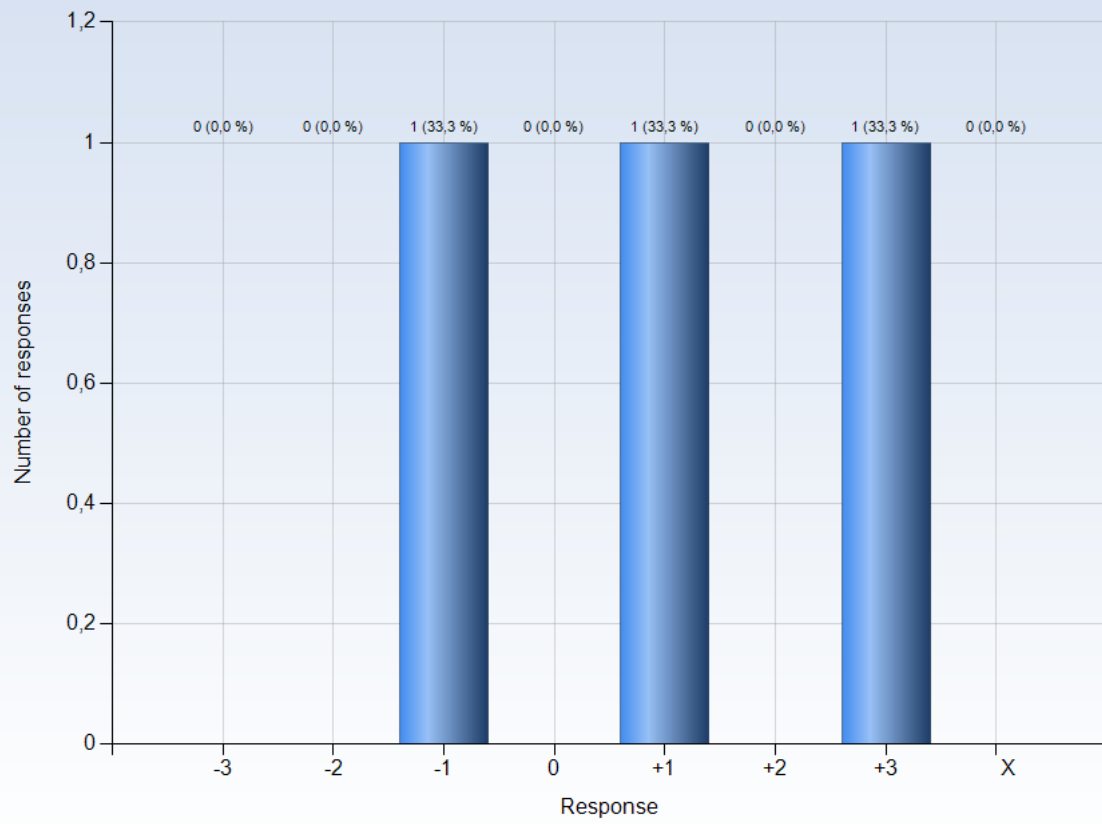
Comments

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



Comments

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



Comments