



Report - SK2760 – 2020-01-18

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):

Muhammet Toprak (toprak@kth.se)

COURSE DESIGN

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

Two lab sessions were added to this course in this period in order to assure the students will learn the methods of basic particle characterization- These techniques were DLS-Zeta potential and FT-IR labs that were part of an earlier course in the program.

THE STUDENT'S 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?

No significant deviation from the expected workload. Students feel their background are solid to follow the course.

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?

All students have passed the course (grades vary from A till E). No significant difference from the earlier years.

OVERALL IMPRESSION OF THE LEARNING ENVIRONMENT

What is your overall impression of the learning environment in the polar diagrams, for example in terms of the students' experience of meaningfulness, comprehensibility and manageability? If there are significant differences between different groups of students, what can be the reason?

Polar diagrams show very much outstretched responses which indicate students feel the course is meaningful, comprehensible and manageable. No difference between student groups.



ANALYSIS OF THE LEARNING ENVIRONMENT

Can you identify some stronger or weaker areas of the learning environment in the polar diagram - or in the response to each statement - respectively? Do they have an explanation?

Polar diagrams, and the statements, show many strong aspects of the course. One of the students has expressed the following:

- The examination was quite different from typical examinations. We were evaluated not by the information we could learn and answer certain questions on an exam sheet but by working on a project and using the knowledge obtained from lectures in the project. It is a great way of learning and in this process, I learned a lot about a certain material which I would never have on my own. This design of the examination challenged me to find relevant literature, compare and present the applicability of the material according to my own understanding.
-

ANSWERS TO OPEN QUESTIONS

What emerges in the students' answers to the open questions? Is there any good advice to future course participants that you want to pass on?

Students find the course definitely useful and have written the following advice statements:

- This course is very essential if you are going to work with solution chemistry synthesis of nanomaterials. It provides a completely new perspective on visualizing nanomaterial synthesis. Prof. Toprak provides extremely helpful knowledge that is otherwise scattered and very difficult to access and follow in a systematic way. The style of exam is also very stimulating to learn a lot by yourself. Start working early on the project!
 - If they want to do Nanomaterials and continue their PhD, they should seriously pay attention to this course and spend more time on it
-

PRIORITY COURSE DEVELOPMENT

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

No immediate action is needed for short term.

OTHER INFORMATION

Is there anything else you would like to add?

No.



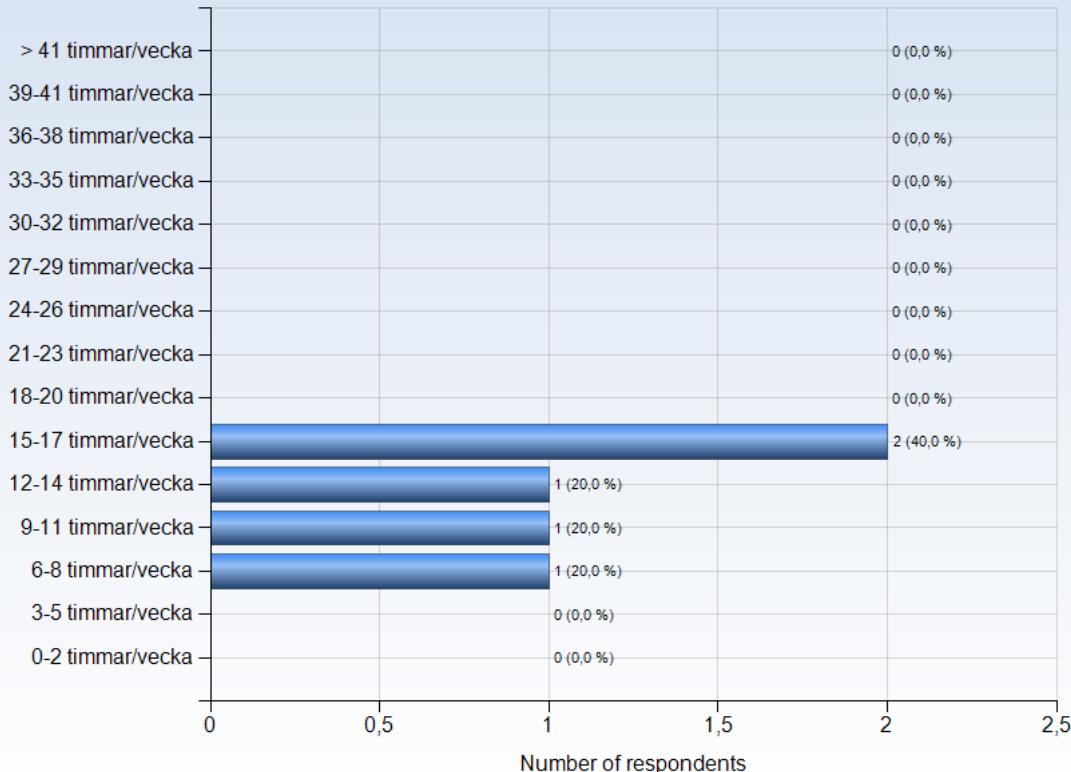
SK2760 - 2019-10-18

Antal respondenter: 9
Antal svar: 5
Svarsfrekvens: 55,56 %



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)

Two lectures per week (4 hours) + 2-4 hours (avg) per week work on assigments/project



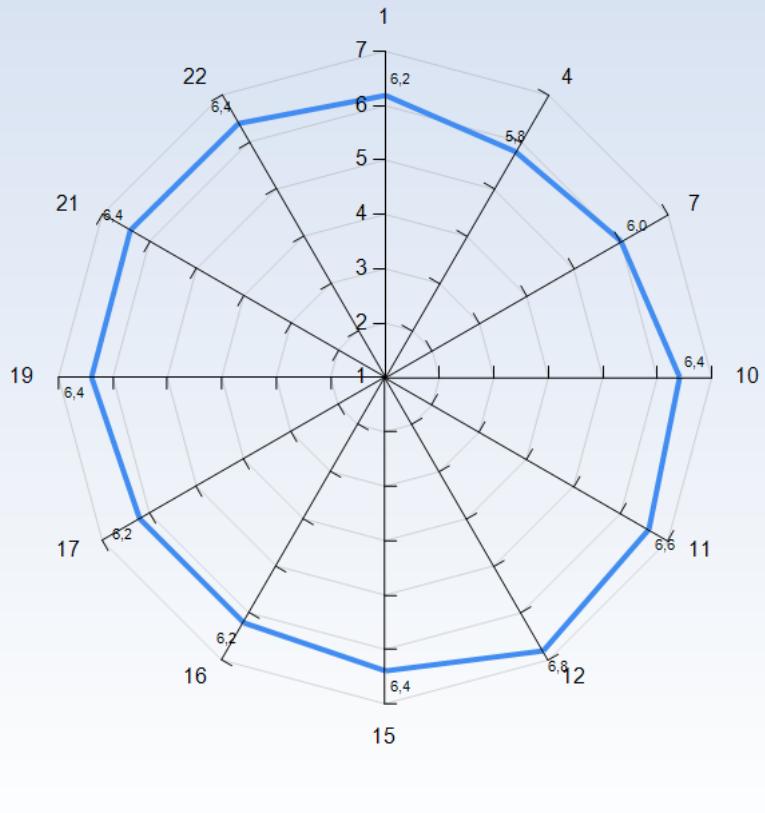
LEARNING EXPERIENCE

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.

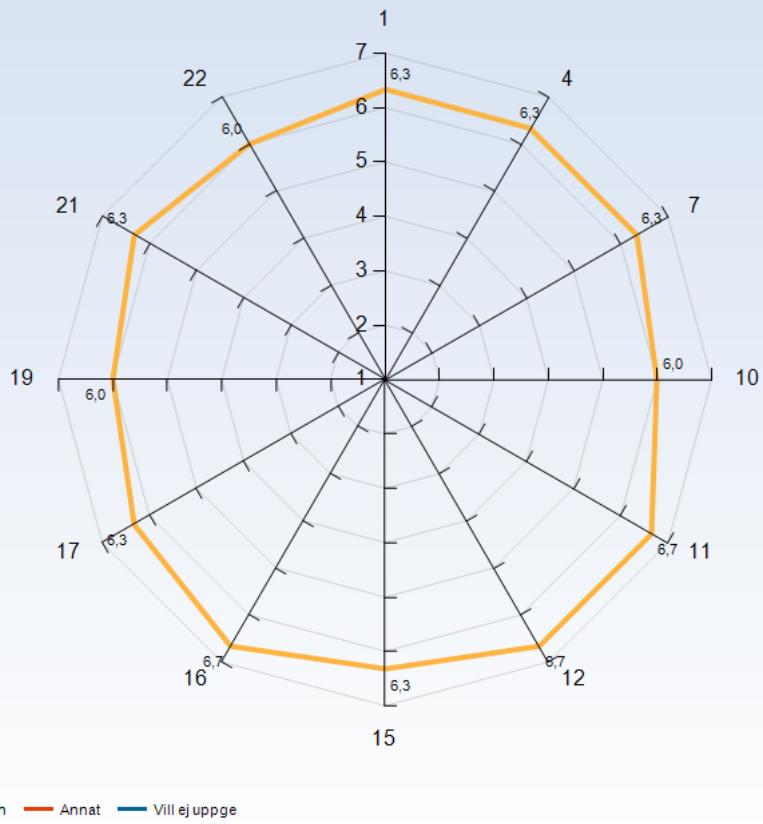
Elmgren, M. & Henriksson, A-S. (2014). *Academic Teaching*, Chapter 3, pp. 57-72. Lund: Studentlitteratur.

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



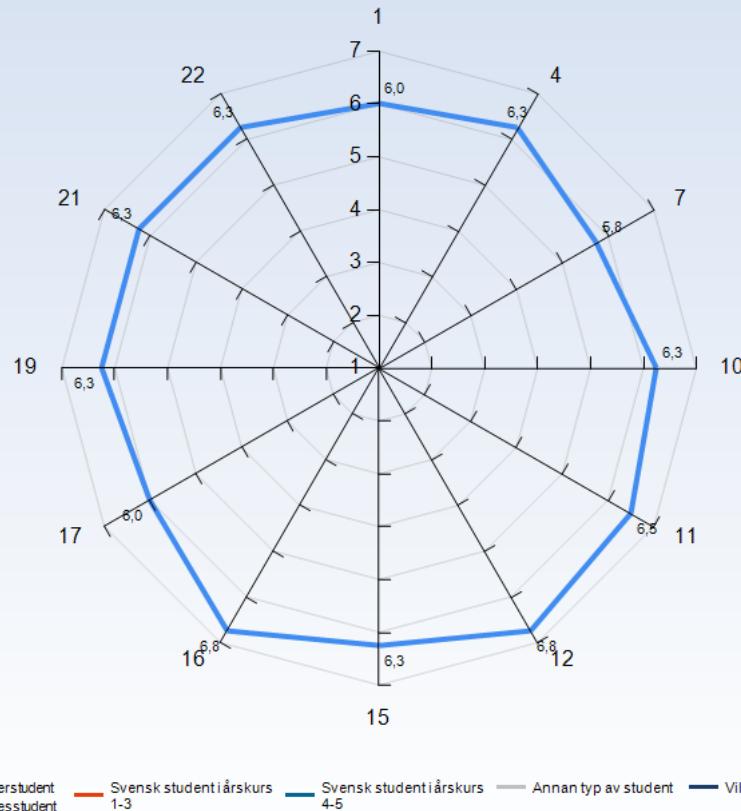
Comments

Comments (I am: Man)

Equality persisted



Average response to LEQ statements - per type of student



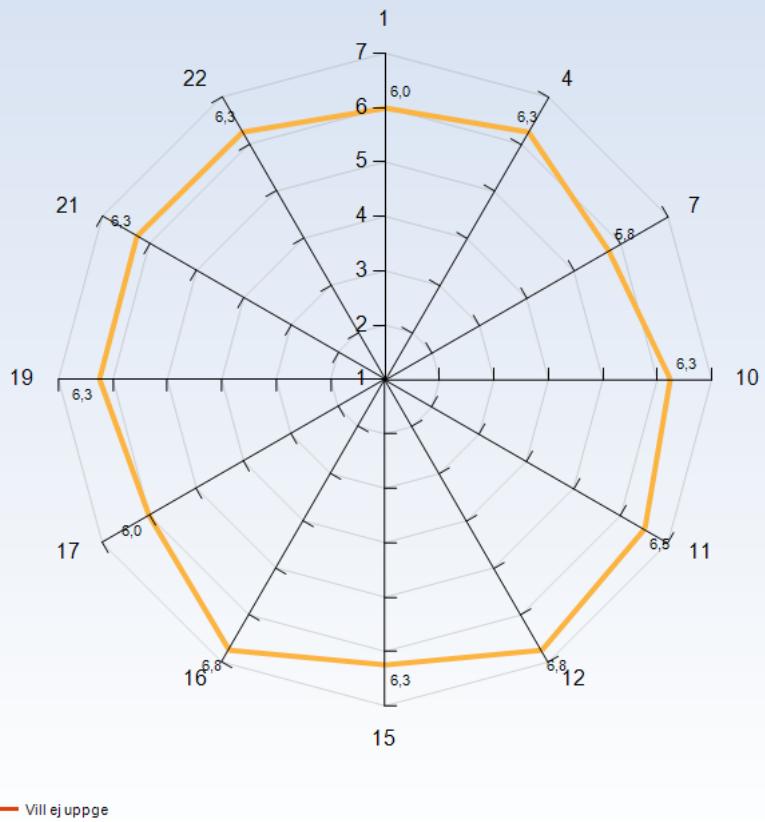
Comments

Comments (I am: International masterstudent)

Equality persisted



Average response to LEQ statements - per disability



Comments



GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I worked: 6-8 timmar/vecka)

The examination was quite different from typical examinations. We were evaluated not by the information we could learn and answer certain questions on an exam sheet but by working on a project and using the knowledge obtained from lectures in the project. It is a great way of learning and in this process, I learned a lot about a certain material which I would never have on my own. This design of the examination challenged me to find relevant literature, compare and present the applicability of the material according to my own understanding.

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

It briefly explains the bottom up processing techniques. Even though I have background on solution based synthesis methods, the professor of this course gives different perspectives for nanoparticle synthesis.

What would you suggest to improve?

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

Clear set of instructions (as announcements) and assignment submissions on CANVAS especially regarding submission dates and times right from the beginning. It is helpful to avoid any misunderstandings that may arise.

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

Instead of doing homework (first assignment), I rather write more lab reports.

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)

This course is very essential if you are going to work with solution chemistry synthesis of nanomaterials. It provides a completely new perspective on visualizing nanomaterial synthesis. Prof. Toprak provides extremely helpful knowledge that is otherwise scattered and very difficult to access and follow in a systematic way. The style of exam is also very stimulating to learn a lot by yourself. Start working early on the project!

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

If they want to do Nanomaterials and continue their PhD, they should seriously pay attention to this course and spend more time on it.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 6-8 timmar/vecka)

All the knowledge gained from this course is very essential especially for students wishing to pursue nanomaterial research in chemistry bottom-up synthesis. It would be nice if Prof. Toprak compiles everything like the lectures and writes a book.

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

Yes. Some students didn't do the assignments, presentations and reports properly which I see this is a disrespectful attitude. Instead of giving pass or fail for the assignments, I rather them to be graded as well. So maybe the student could see their mistakes in the very beginning and put more effort to improve themselves.

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

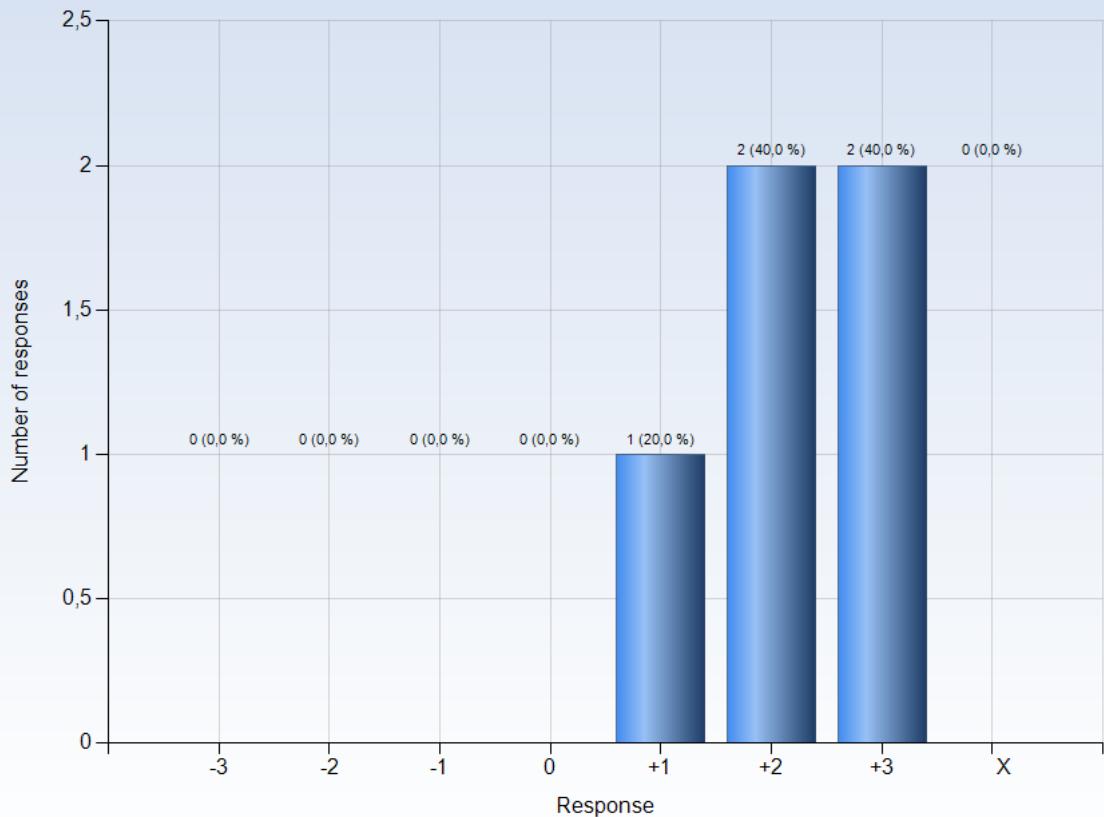
0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



1. I worked with interesting issues



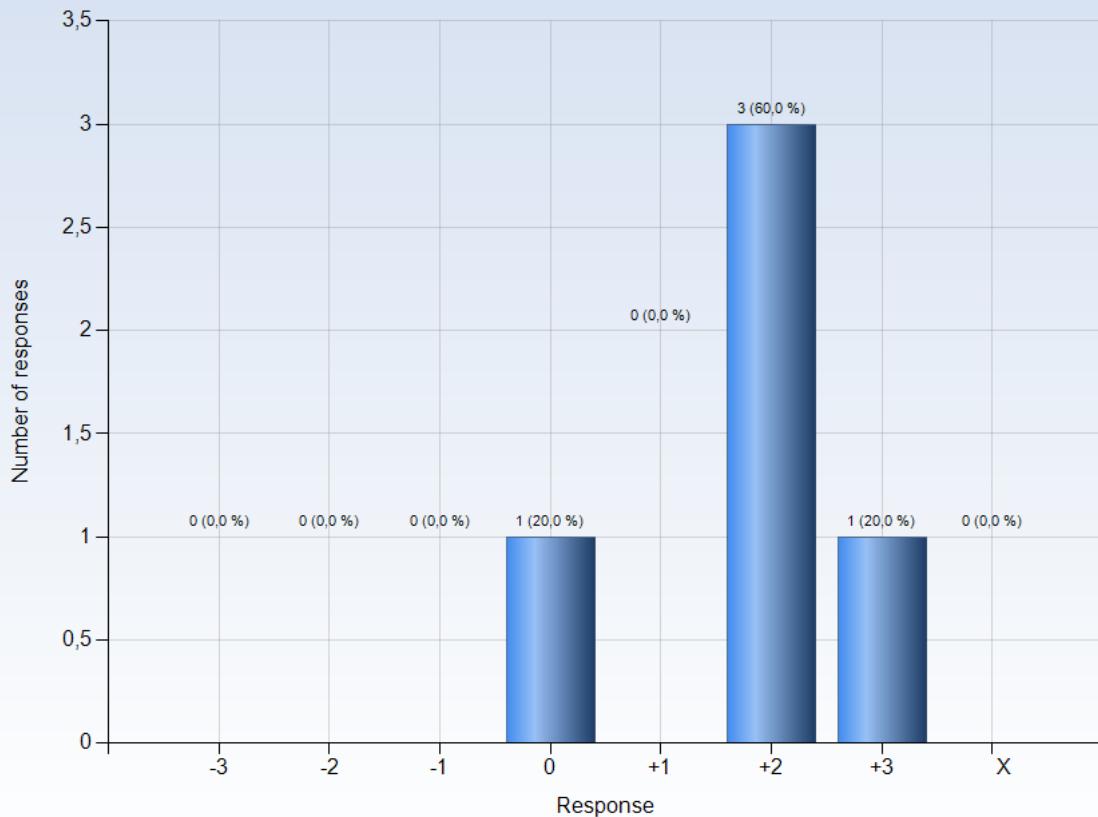
Comments

Comments (My response was: +3)

Best part about the course - project



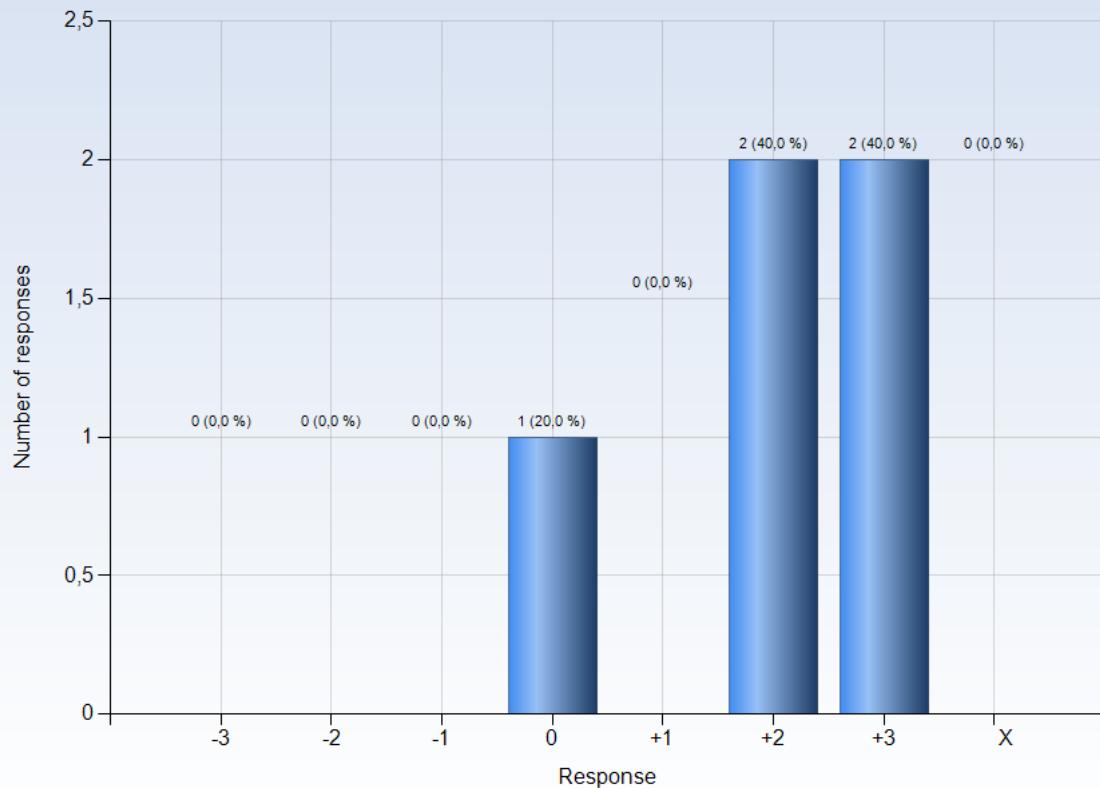
4. The course was challenging in a stimulating way



Comments



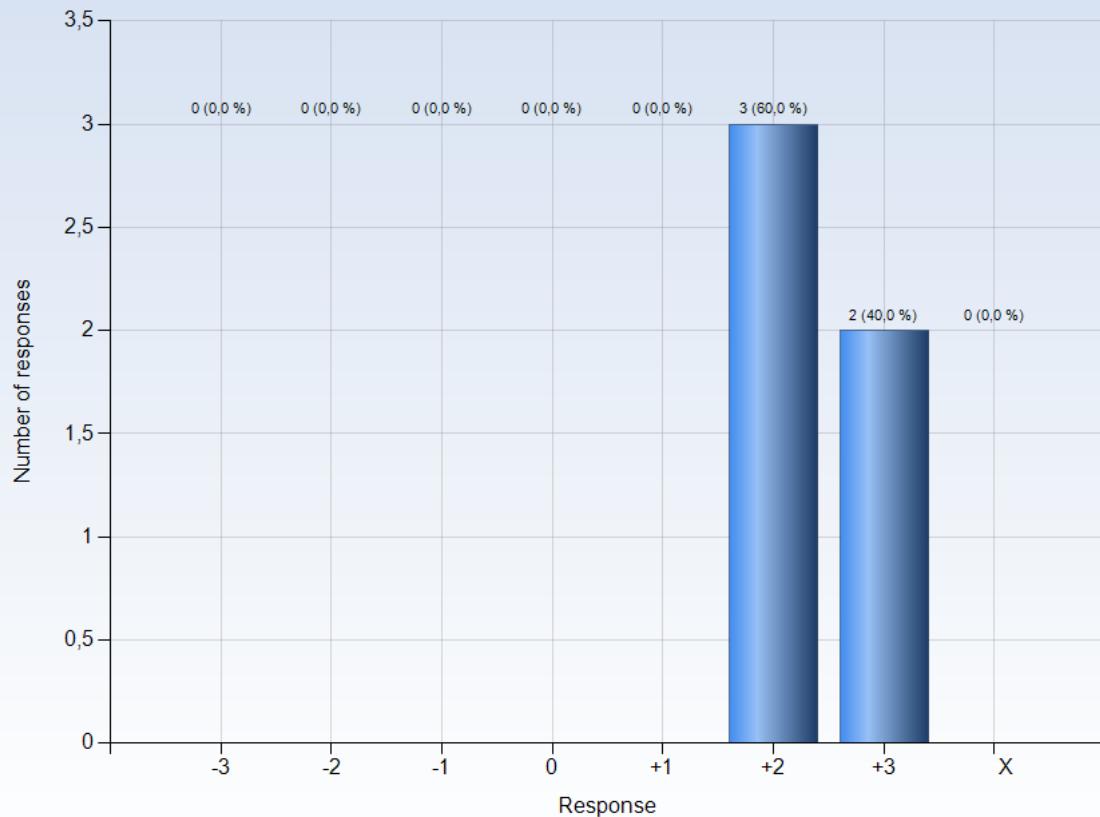
7. The intended learning outcomes helped me to understand what I was expected to achieve



Comments



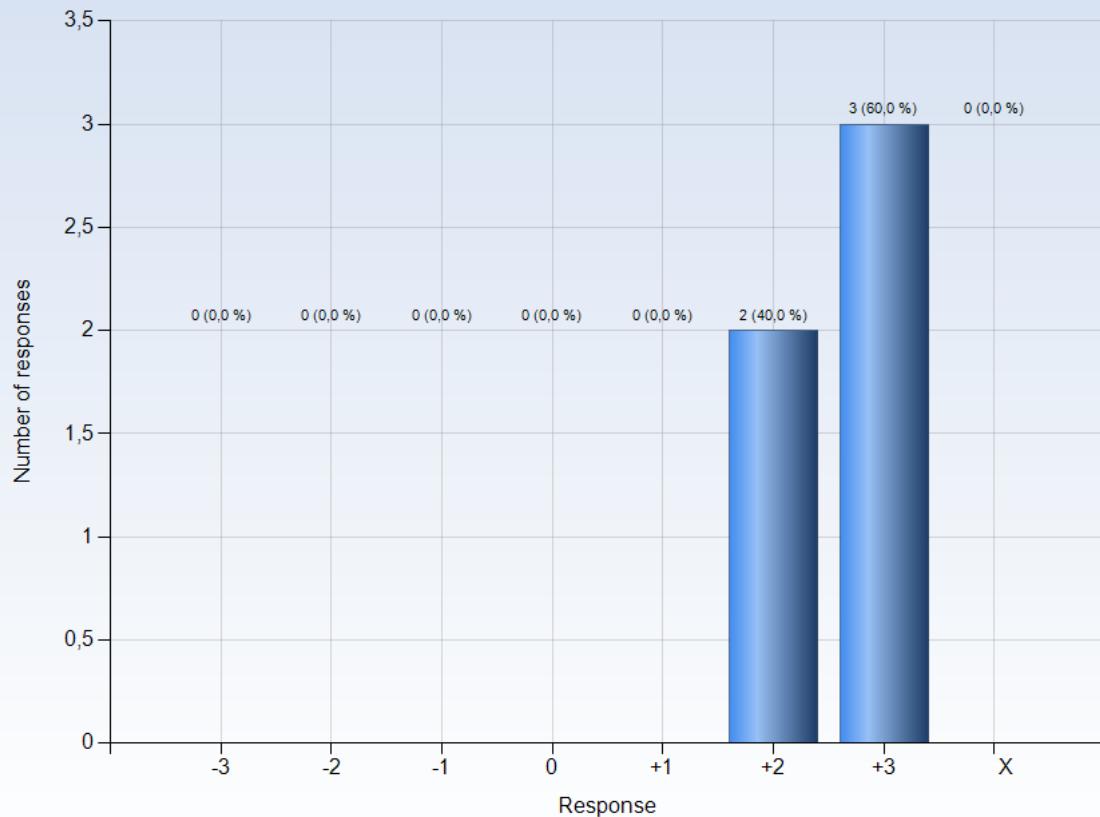
10. I was able to learn from concrete examples that I could relate to



Comments



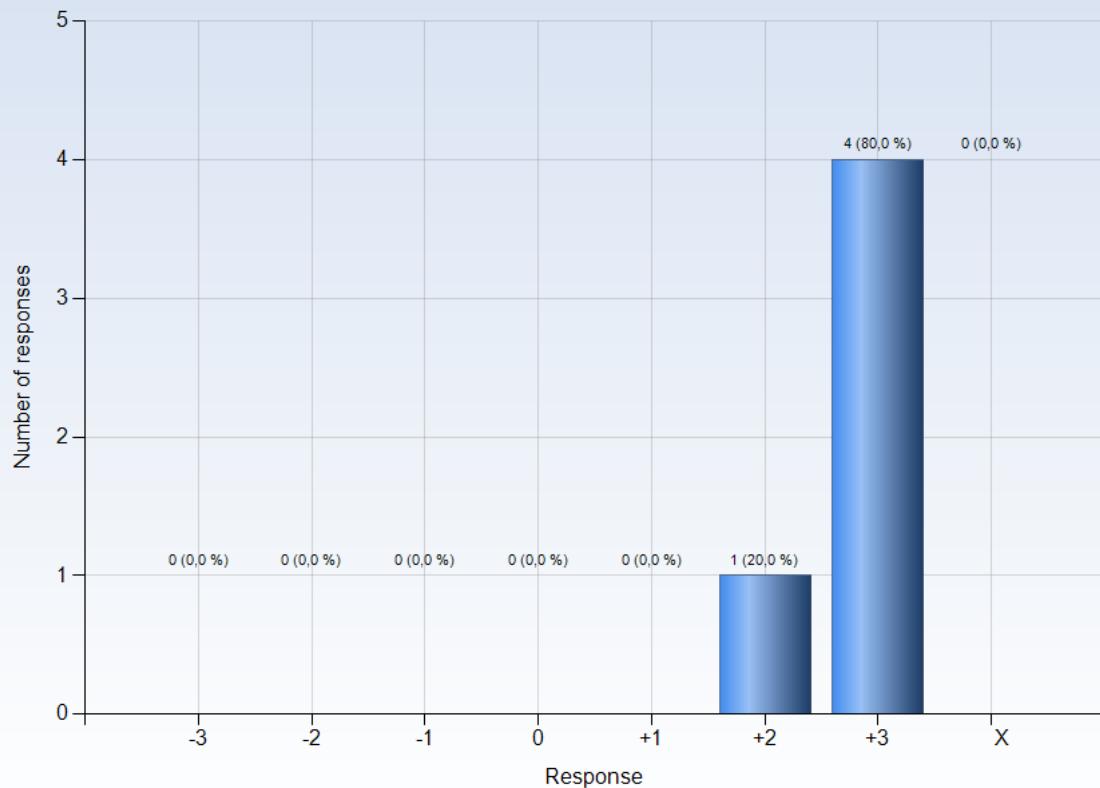
11. Understanding of key concepts had high priority



Comments



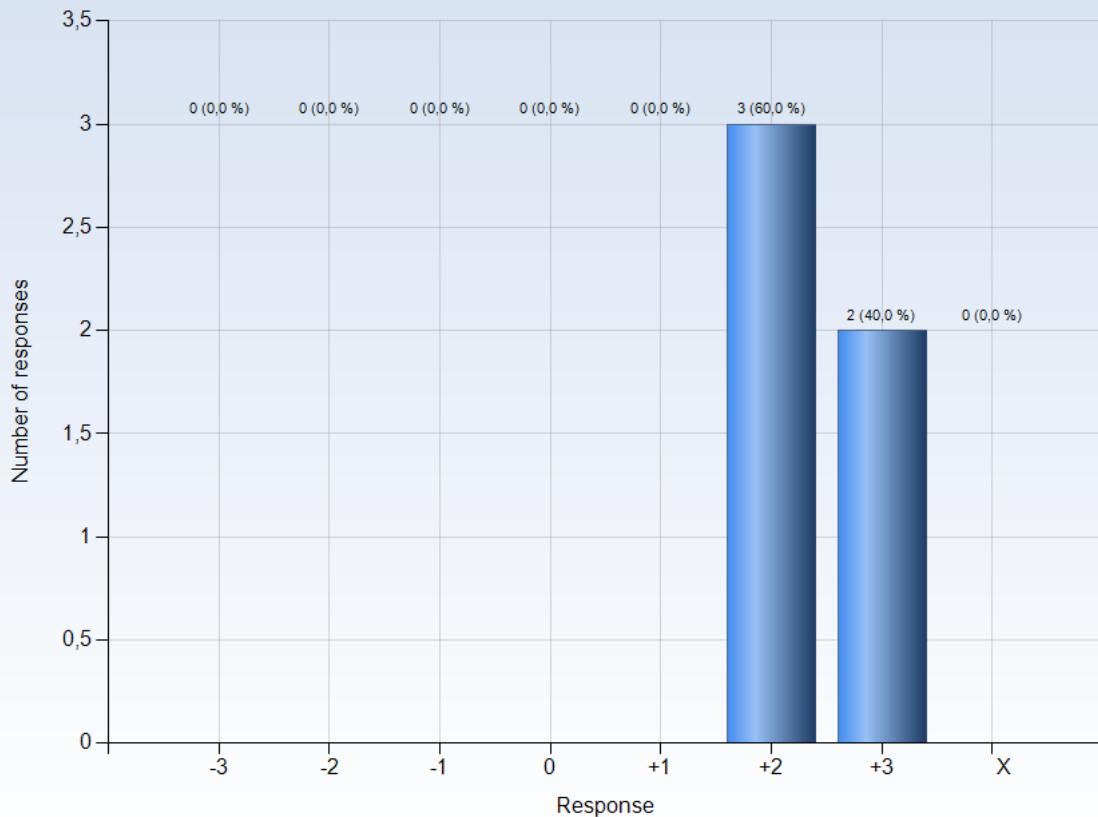
12. The course activities helped me to achieve the intended learning outcomes efficiently



Comments



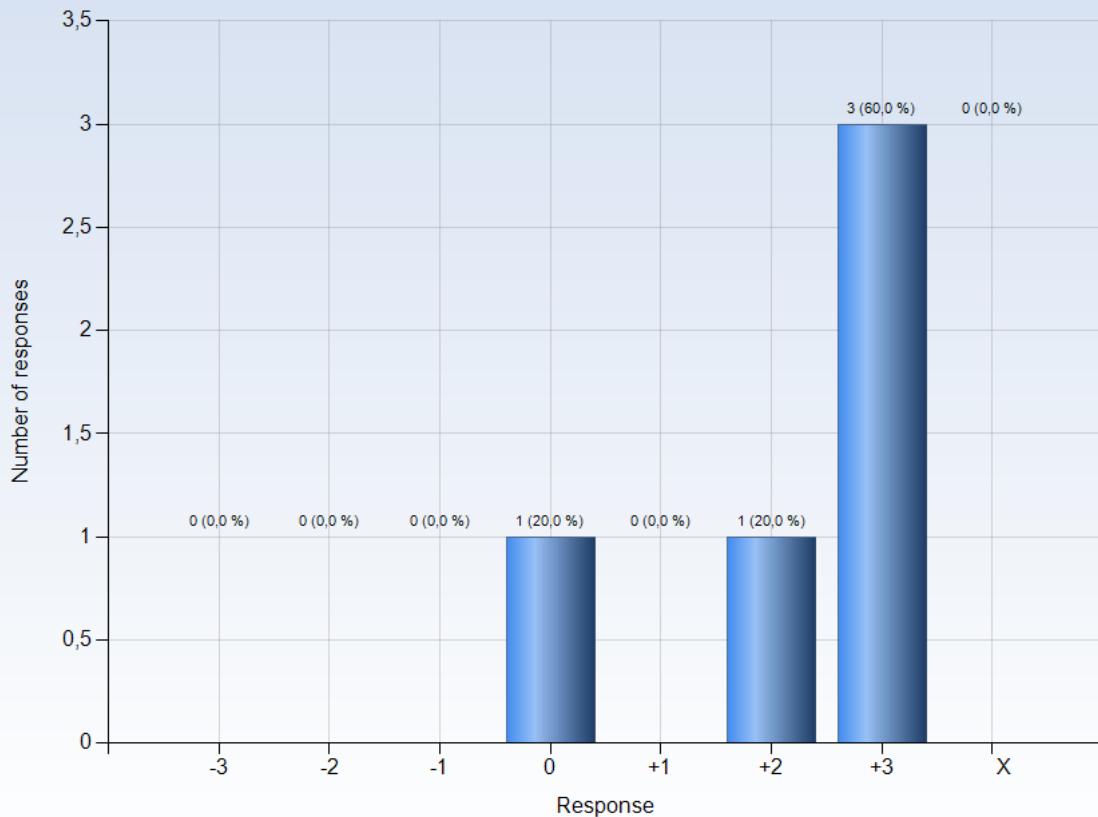
15. I was able to practice and receive feedback without being graded



Comments



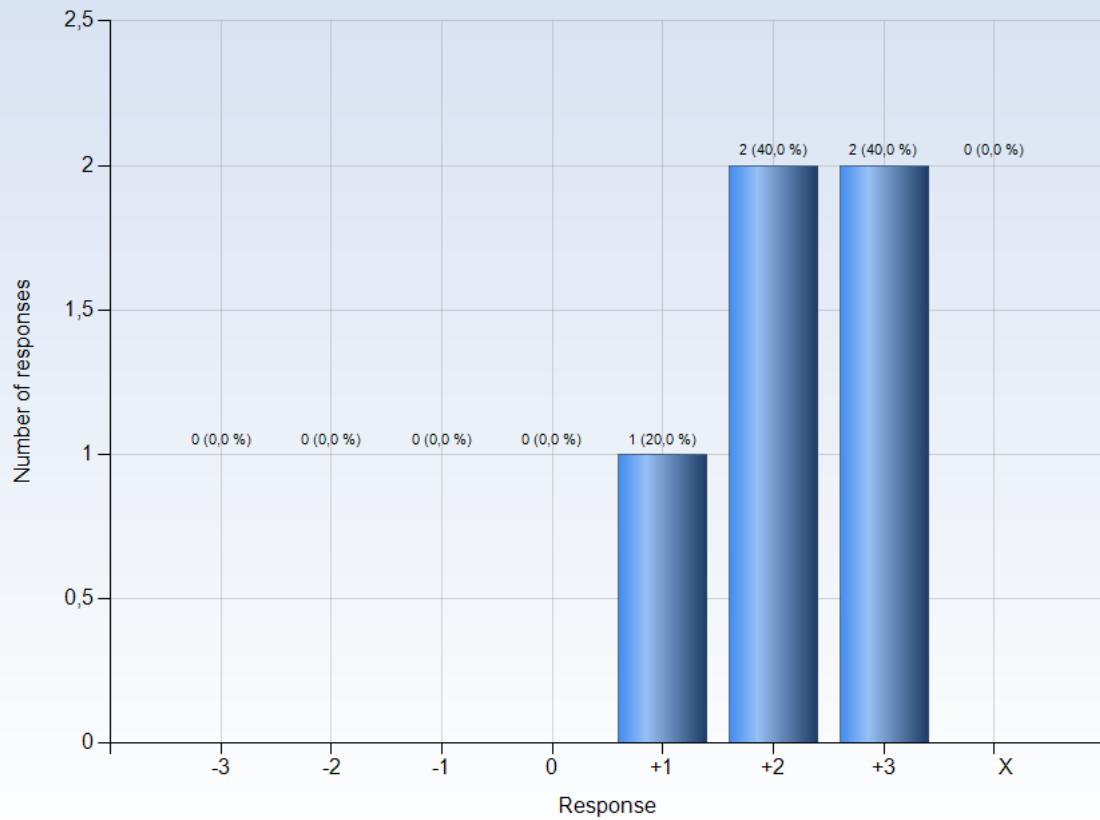
16. The assessment on the course was fair and honest



Comments



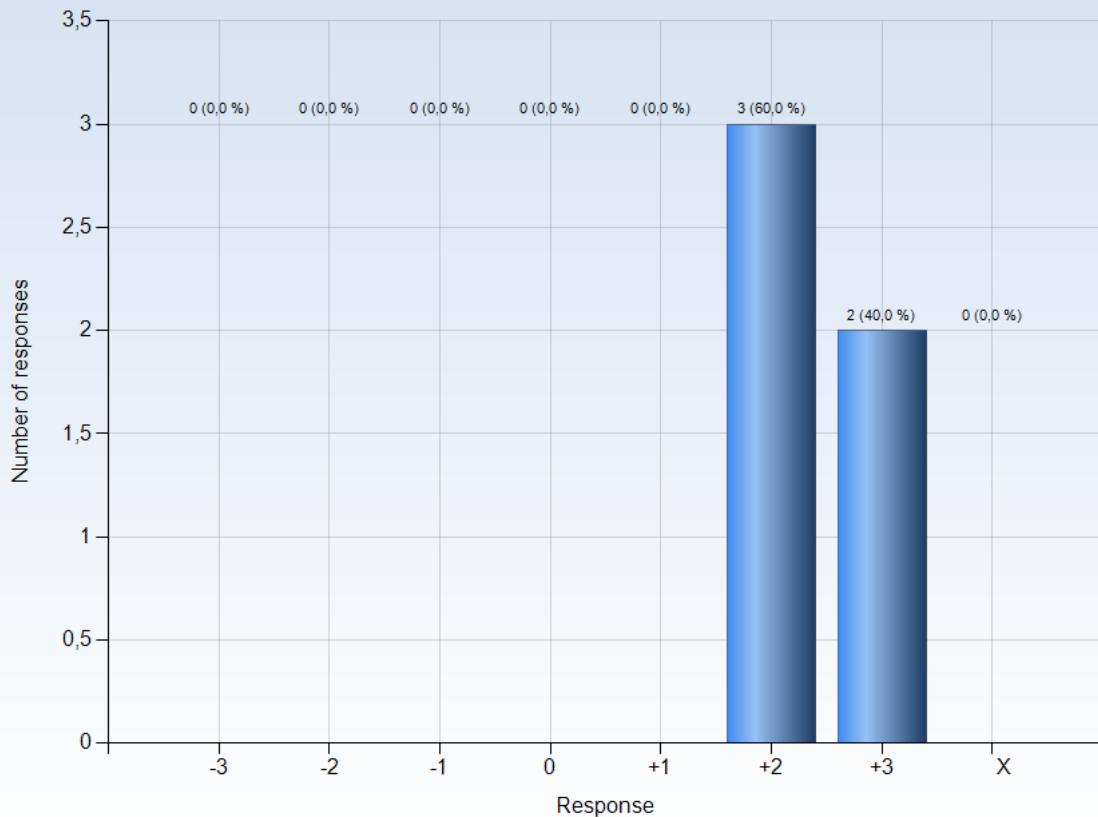
17. My background knowledge was sufficient to follow the course



Comments



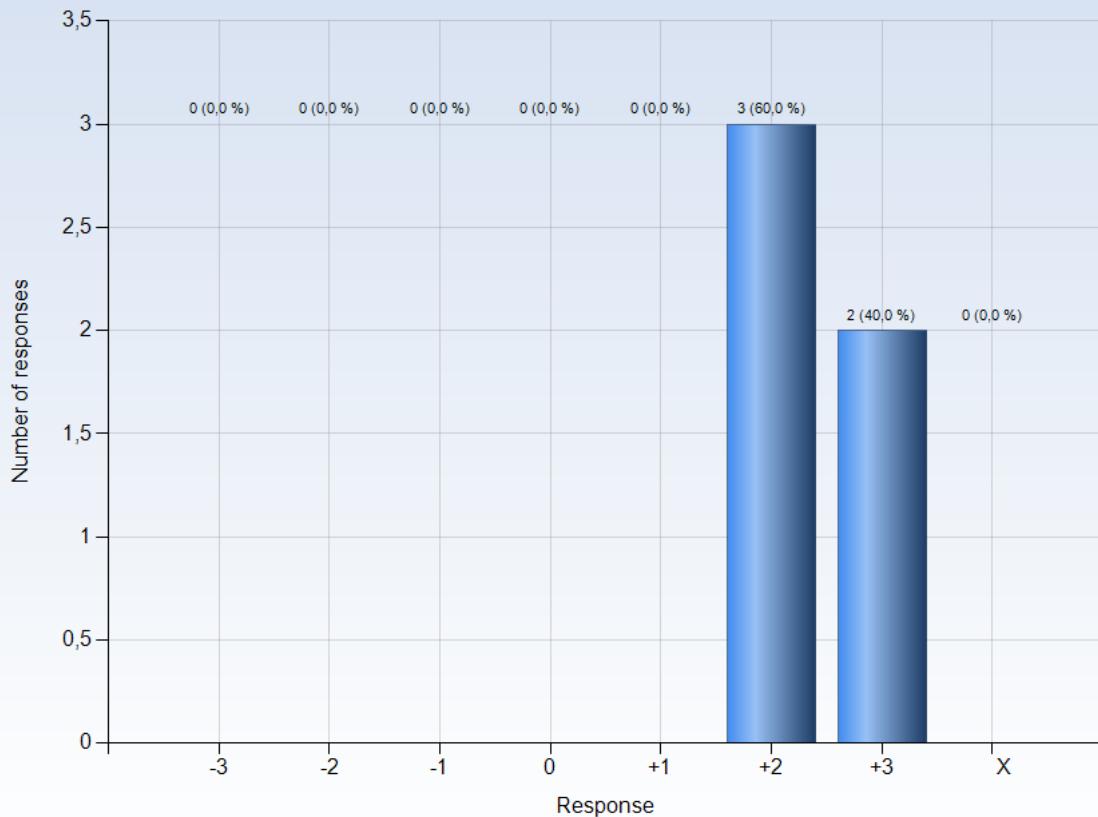
19. The course activities enabled me to learn in different ways



Comments



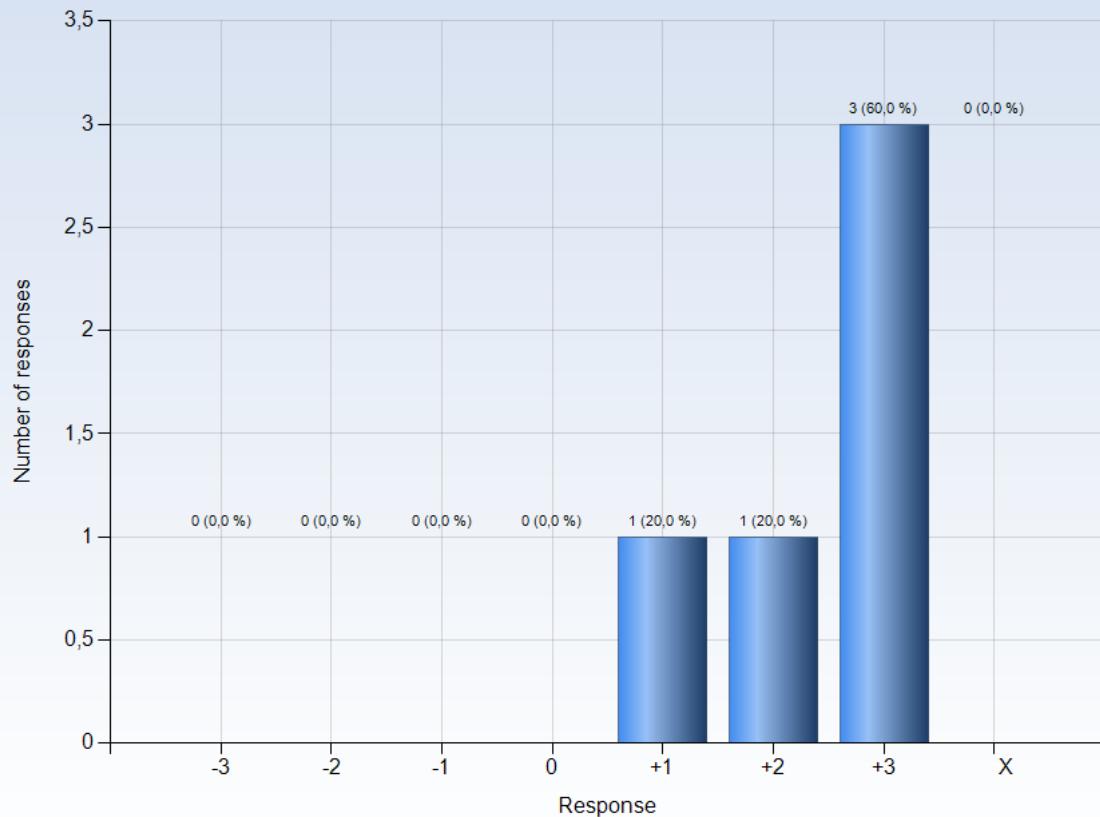
21. I was able to learn by collaborating and discussing with others



Comments



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



Comments