

Analysis of Quality Control Course (code MG2202, 9ECTS and MG2033, 6 ECTS)
VT19

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1. Description of the course evaluation process:

This course evaluation is conducted based on the input received from the students through course evaluation surveys in the course MG2202 and MG2033 and based on the experiences of the course responsible/teacher gathered during running the course. The main reasons for combining these two courses in the evaluation process are twofold. Firstly, MG2202 is an extended course of MG2033 meaning that the major part of the course contents of both the courses is the same. Secondly, MG2202 usually has about 15 participants and when the course evaluation survey is sent not enough responses are received. For instance, in VT 19 only 2 out of 14 participants in MG2202 have responded, which means that a survey report could not be generated due to this low response rate. Although this course evaluation is done mainly based on the survey responses of the students in the course MG2033, it must be kept in mind that even the response rate in MG22033 is rather low. Only 13 out of 44 students have responded to the course evaluation survey making the response rate 29, 55%.

2. Description of meetings with students

No meetings with the students were conducted.

3. Course design

The structure of the courses MG2202 and MG2033 are shown in the table below.

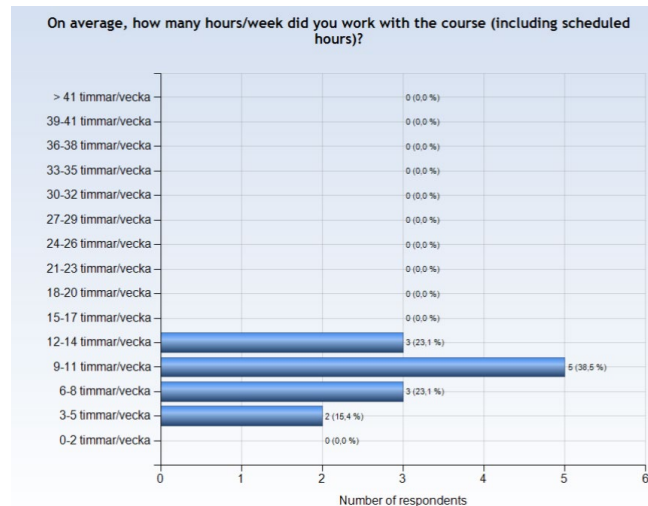
	MG2202	MG2033	Estimated lecture hrs	Exam type
Period 3	Statistics	-----	24	2 Exercises- P/F (3 ECTS)
Period 4	Quality Management + Quality Techniques	Quality Management + Quality Techniques	~32	5 Assignments P/F (2ECTS) Exam -A/F (4ECTS)
	= 9 ECTS	= 6 ECTS		

The extended course has a distinct part covering basic engineering statistics equivalent to 3 ECTS, which is run in period 3. In period 4, participants from MG2202 join the course MG2033 that covers quality management and techniques, which is equivalent to 6 ECTS. The basic engineering statistics part is examined through 2 exercises graded as P/F. Quality management and techniques parts are examined through 5 assignments graded as P/F and the final exam graded as A-F. The assignments in quality management and techniques parts are equivalent to 2 ECTS and the exam weight is equivalent to 4 ECTS. Besides these examination activities, most of the lectures contain class tutorials designed to get a deeper understanding of the topics. Tutorials also help in preparing the assignments and for the exam as well as to ensure that all ILOs are met. For MG2202 total of approximately 56 hours and

MG2033, approximately 32 hours of lectures are scheduled. The remaining time is expected to be spent in preparing assignments, own studies and preparing for the exam.

Students' workload

As shown in the summary of the survey outcome, approximately 61% of respondents spent between 9-14 hours every week.



The course MG2202 is run between mid of January to the end of May, which is equal to about 18 weeks. This means these respondents had spent between 162 to 252 hours in the course against the expected 360 hours (9 ECTS courses). In the case of MG2033, the course is usually run between mid of March to the end of May, which is equal to about 10 weeks. This means these respondents had spent between 90 to 140 hours in the course against the expected 240 hours (6 ECTS courses). This time difference is due to the fact that the course has 5 assignments, which are graded as Pass or Fail. There is a significant difference between the time needed to prepare an assignment that will just pass and the time needed to prepare an assignment that will pass with distinction. Students who are less motivated/ambitious for various reasons such as the course is not a mandatory course or the course is just to fulfil the requirements of the exchange program may choose to do a minimum. However, this variation does not impact the ILOs in any way.

Students' results on the course

The grade distributions of both courses in VT 19 are shown below. These distributions are similar to the grade distributions of previous years.

Grades	Count	%
A	0	0
B	2	18
C	4	36
D	4	36
E	0	0
F	1	9
Total	11	100

Results of MG2202 VT 19

Grades	Count	%
A	9	24
B	11	29
C	11	29
D	2	5
E	1	3
F	4	11
Total	38	100

Results of MG2033 VT 19

Students' answers to open questions

Not many students have left comments in the open questions sections. Those who have left comments are listed below by categorizing them as positive and critical comments.

Positive comments:

"The Course has given good knowledge about the Quality Management and the Statistical Tools of Quality in the Course, also the Assignments were very good to work with the Practical application oriented application of Statistical, Strategy development in the Assignments."

"The course work load was optimally designed."

"We had good discussion for assignments and was a great experience."

"The assignments and the lectures had tutorials where we had a great discussions and solution formulations in the Course"

"The best aspect is the Assignments which were really more focused on the Application of the theoretical concepts for solving the Assignments based on the Lectures for Quality Management and the Quality technique parts were covered."

"The combination between management and Statistics Quality Management lectures by Asif was the most interesting part. The tutorials conducted during the lectures were extremely useful to grasp the concepts. The assignments were interesting. Especially the assignment 1 and 5 were very knowledgeable. The lectures on QFD, strategic planning, leadership helped a lot to understand how things work when a policy is undertaken in a company. DOE by Malvina was also an interesting topic."

"The course is really good and it gives more deeper knowledge in the Quality for the organization"

"The Course covers all the Quality management tools and statistical tools for the Production and Organizational developments through the Lectures and the Assignments."

"The course is really good and gives clear concept understanding through the Lectures and the Assignments."

"In general, the course was extremely knowledgeable, well organised and challenging in a positive way."

Critical comments:

"One more lecture in control charts could be added discussing charts other than X and R charts. This part could have been covered with more depth."

"Be regular to the classes. Actively participate in lectures and tutorials. Revise every topic regularly say weekly. Start assignments well in time and don't extend them up to last minute. Try to read and explore more literature on Quality."

"The different points for different grades were not even on the exam, nor in the course pm"

Summary of students' opinions

As is seen above, there are three critical comments, the first one is regarding extending the lecture in one of the topics. The respondent is absolutely correct, at least two lectures are needed to cover Statistical Process Control (SPC). In fact, in the original course plan, two lectures were allocated for SPC. But due to some unavoidable circumstances, the responsible for the lectures had to cancel the lectures. As a result of this last-minute cancellation, we were forced to make some last-minute resource allocation, which could only commit for one lecture. Therefore, two lectures were condensed

into one lecture. The 2nd comment, in my opinion, is to the respondent him/herself. The 3rd comment is an easy fix that will be taken care of before the next course start.

Overall impression:

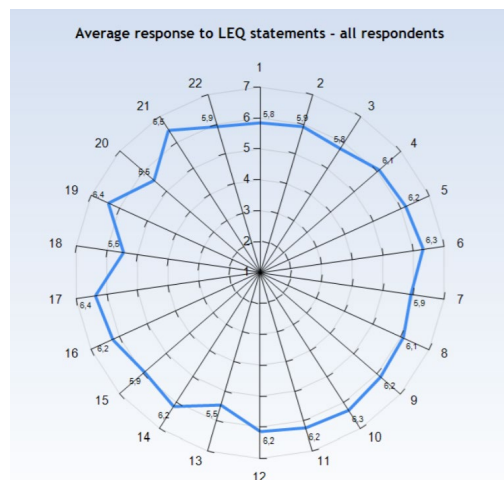
The polar diagram below shows the average response to the LEQ statements for all of the respondents (only valid responses are included).

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

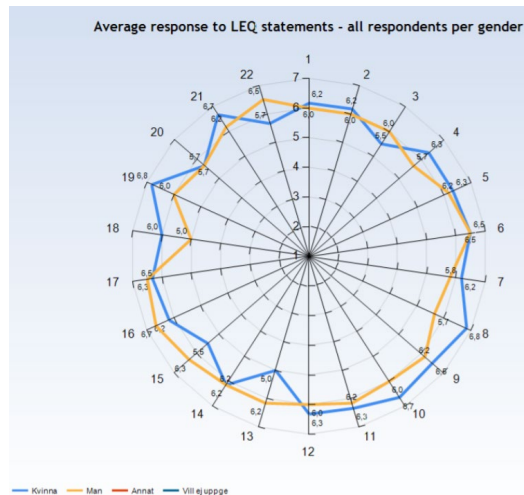
7 = Yes, I strongly agree with the statement



The lowest average score in the polar diagram is 5.5 for questions 13, 18, and 20. The question where the score is 5.5 is the potential for development. However, question 18 is about students' own reflection on the learning process, which is hard to influence in course of 50+ participants with 6 teachers. Similar is the case for question 20. In such a large course, activities need to be fixed and planned well in advance in order to keep them manageable. However, when it comes to solving assignment tasks, students are in control of the approaches they want to take to solve them.

Analysis:

Based on the input from students and my own experience it is safe to say that students perceive the course as a good course. The course contents cover important aspects of quality control and the course activities are well aligned to meet all ILOs. There is some potential for developments as discussed in the above sections and they will be addressed accordingly in the next course intake. The polar diagram is looked at from the view of different genders (shown below), which in my opinion is inconclusive.



In several cases, male and female participants have the opposite opinion about certain questions. For example, the average response to LEQ statement 13 (I understood what I was expected to learn in order to obtain a certain grade) is 6.2 from male and 5 from female participants. In the case of statement 18 (I regularly spent time reflecting on what I learned), the average response is 6 from the female and 5 from the male participants. This requires further investigation of the fact if the same LEQ statement is perceived differently by a different gender.

Prioritized course development:

Based on the input and analyses made above, the following activities are prioritized for the course development for the next intake:

1. Clarify what is expected and needed to get certain grades. This will be aligned with point no.3.
2. Investigate (by discussing with students and colleagues) if the statements in LEQ are perceived/interpreted differently by participants of a different gender.
3. Implement 'Målrelaterade betyg' as required by KTH and clarify the scales in the course PM.

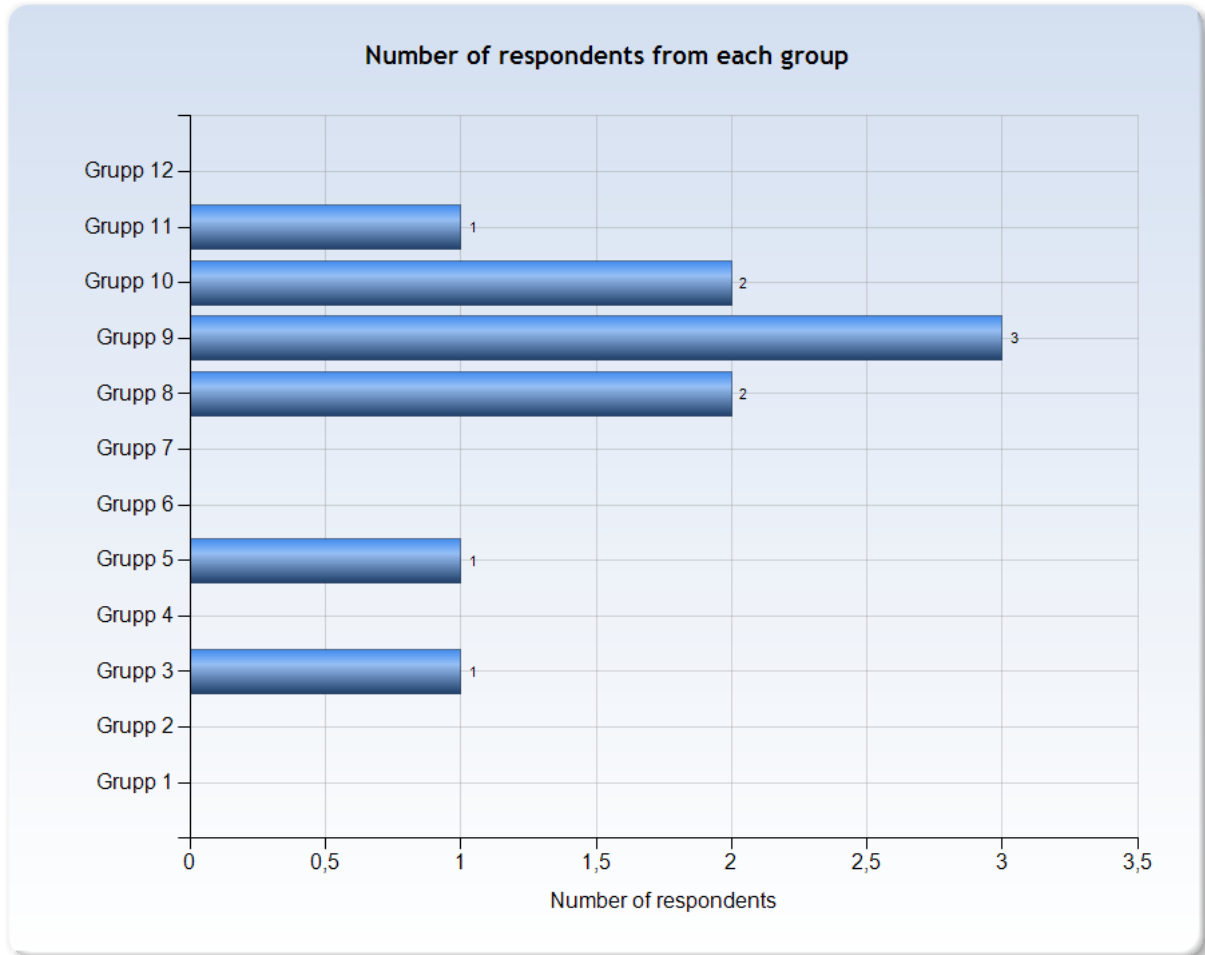


MG2033 - 2019-06-03

Antal respondenter: 44
Antal svar: 13
Svarsfrekvens: 29,55 %



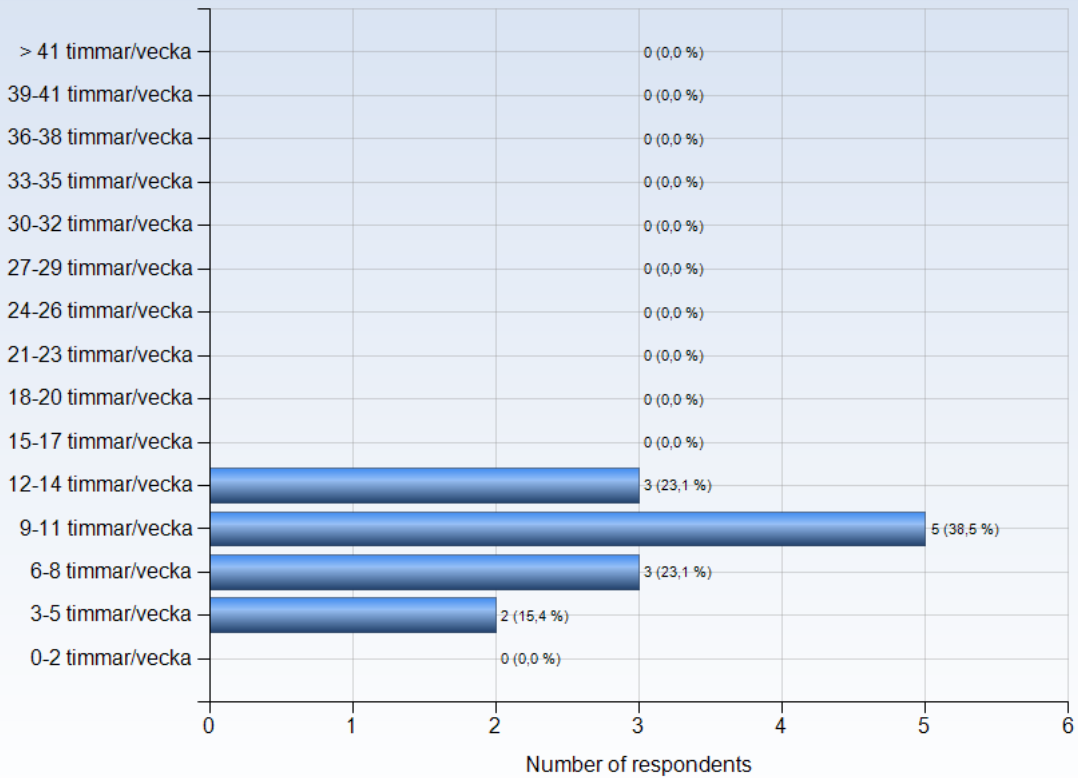
GROUP MEMBERSHIP



Comments

ESTIMATED WORKLOAD

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



Comments

Comments (I belonged to: Grupp 8)

The Course has given good knowledge about the Quality Management and the Statistical Tools of Quality in the Course, also the Assignments were very good to work with the Practical application oriented application of Statistical, Strategy development in the Assignments.

Comments (I belonged to: Grupp 9)

The course work load was optimally designed.



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:

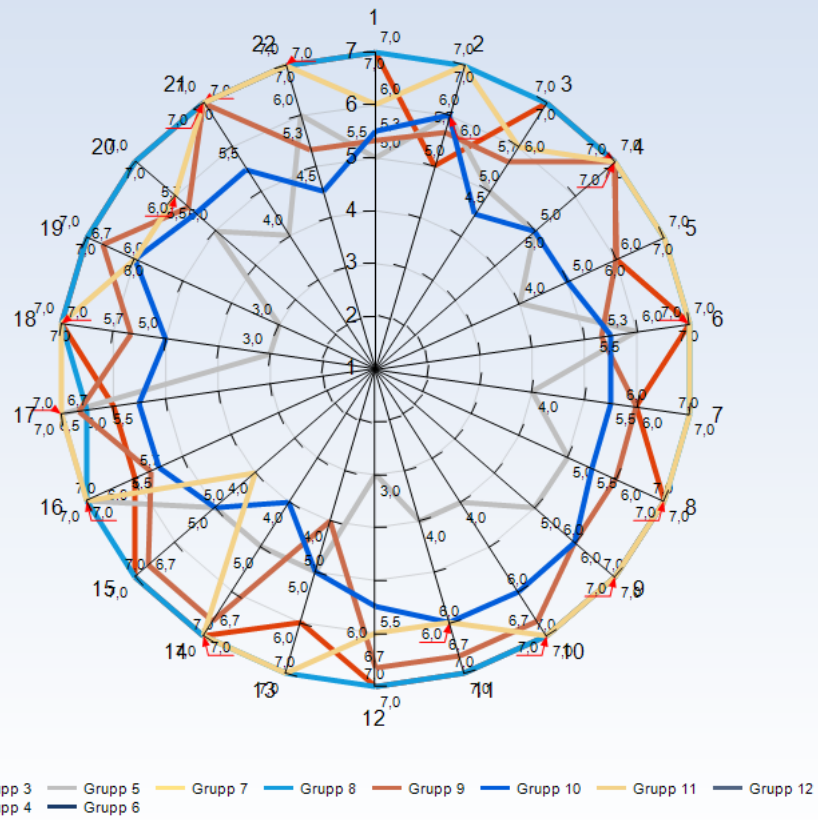
1 = No, I strongly disagree with the statement

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 - per group





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.

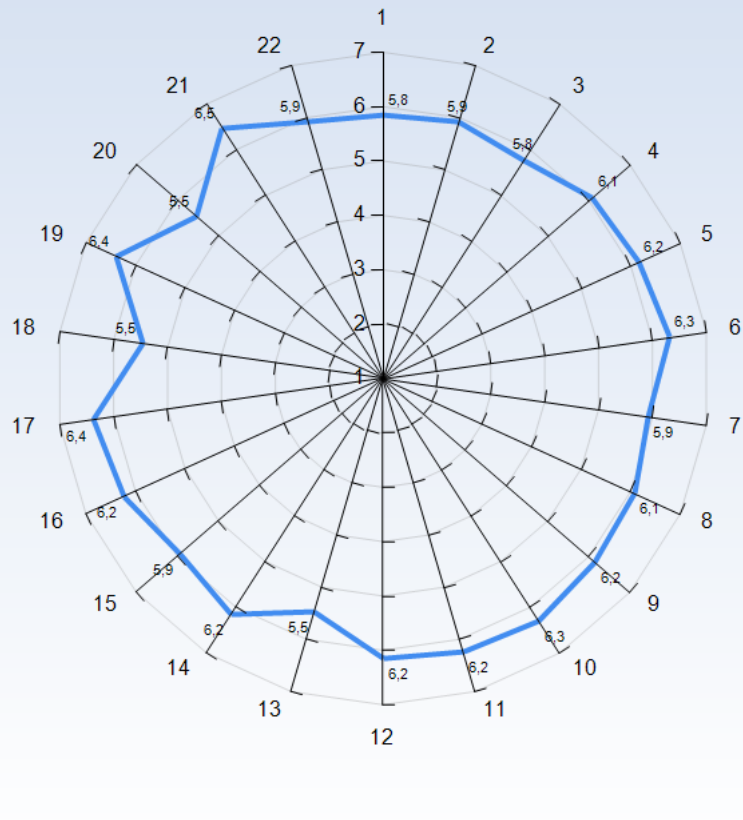
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

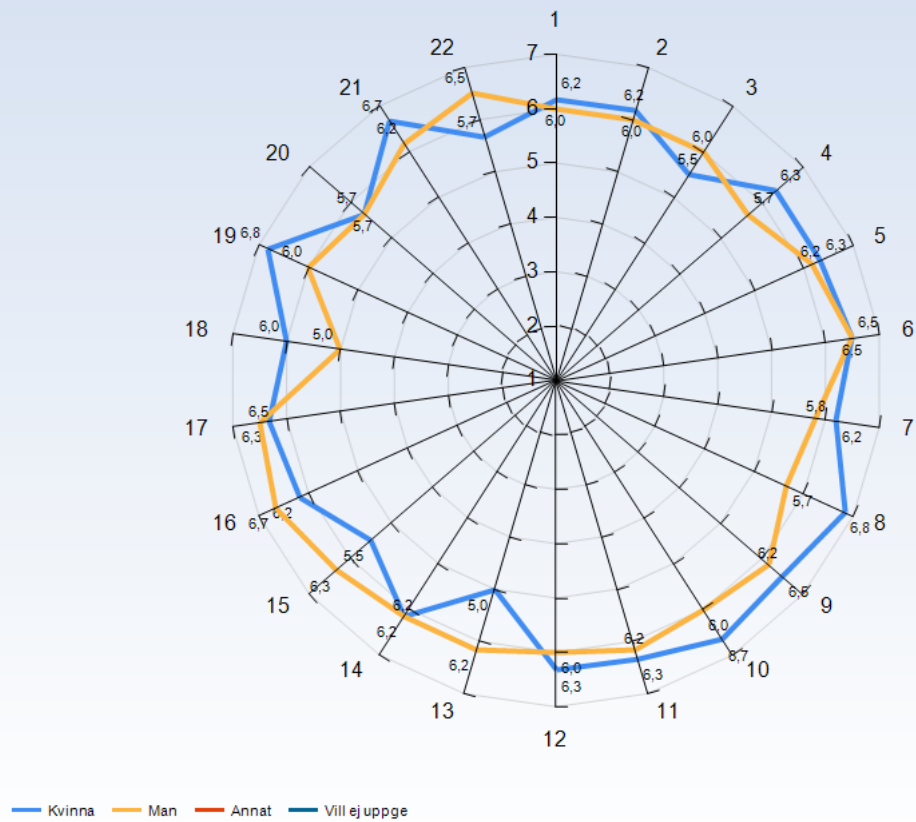
Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

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

Average response to LEQ statements - all respondents



Average response to LEQ statements - all respondents per gender

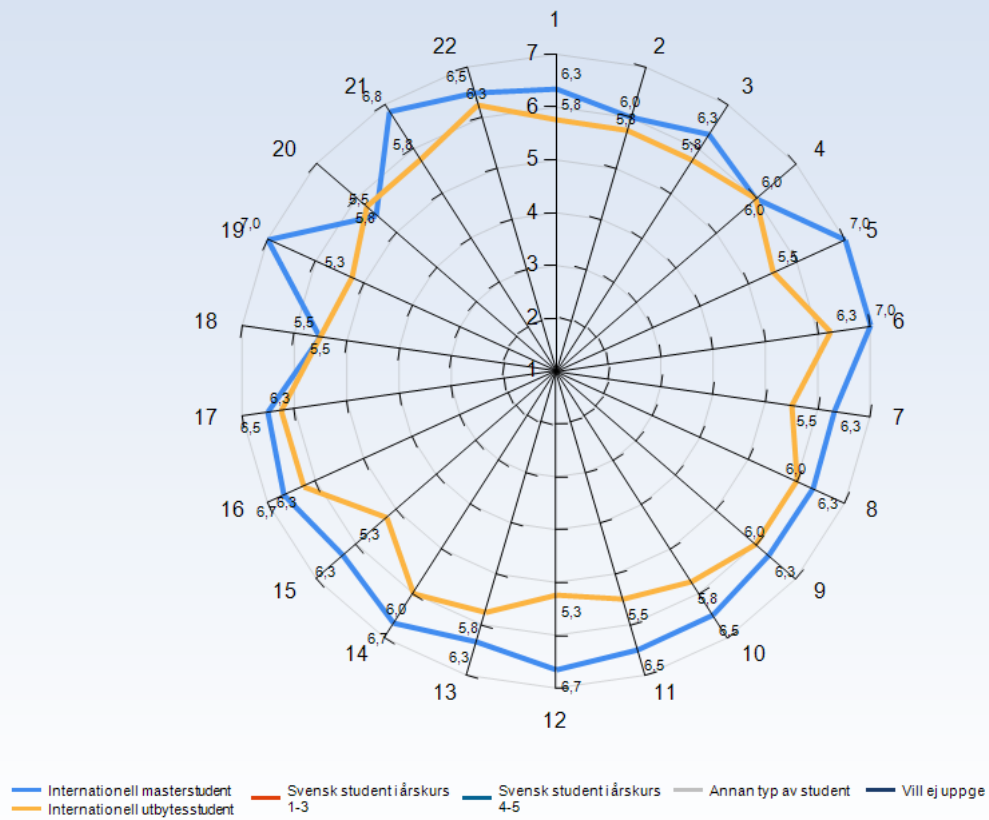


Comments

Comments (I belonged to: Grupp 8)

We had good discussion for assignments and was a great experience.

Average response to LEQ statements - all respondents per type of student

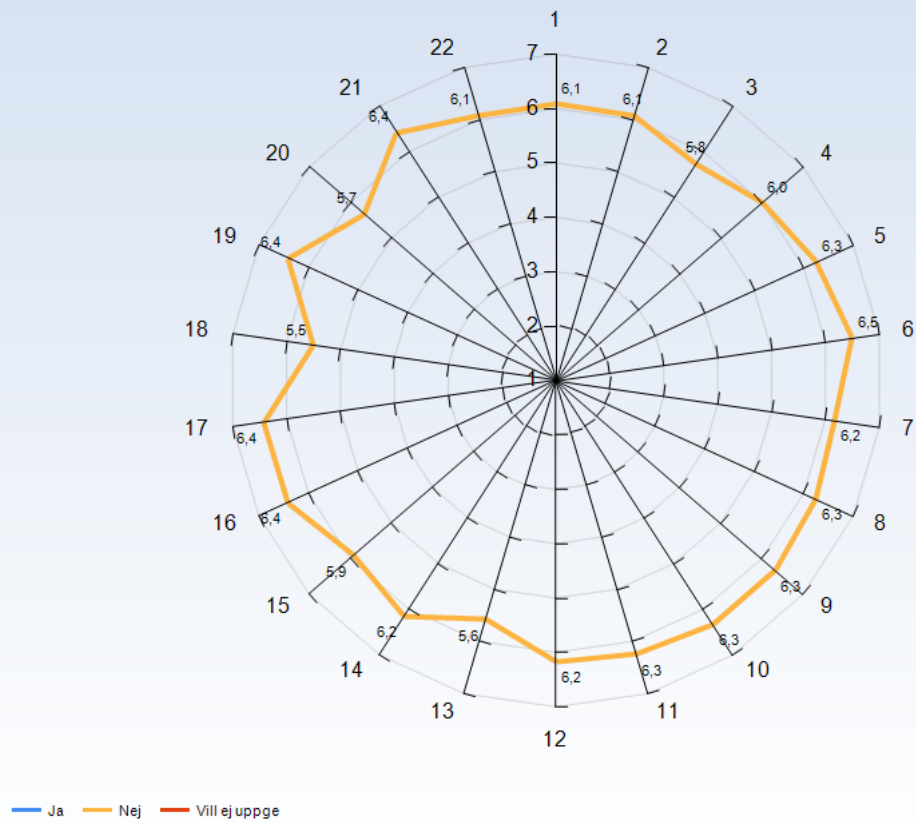


Comments

Comments (I belonged to: Grupp 8)

The assignments and the lectures had tutorials where we had a great discussions and solution formulations in the Course.

Average response to LEQ statements - all respondents per disability



Comments



GENERAL QUESTIONS

What was the best aspect of the course?

What was the best aspect of the course? (I belonged to: Grupp 8)

The best aspect is the Assignments which were really more focused on the Application of the theoretical concepts for solving the Assignments based on the Lectures for Quality Management and the Quality technique parts were covered.

What was the best aspect of the course? (I belonged to: Grupp 9)

The combination between management and Statistics

Quality Management lectures by Asif was the most interest part. The tutorials conducted during the lectures were extremely useful to grasp the concepts. The assignments were interesting. Especially the assignment 1 and 5 were very knowledgeable. The lectures on QFD, strategic planning, leadership helped a lot to understand how things work when a policy is undertaken in a company. DOE by Malvina was also an interesting topic.

What would you suggest to improve?

What would you suggest to improve? (I belonged to: Grupp 8)

The course is really good and it gives more deeper knowledge in the Quality for the organization.

What would you suggest to improve? (I belonged to: Grupp 9)

Release assignments so we can make them during the easter break. We had a lot of available time then

One more lecture in control charts could be added discussing charts other than X and R charts. This part could have been covered with more depth.

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I belonged to: Grupp 8)

The Course covers all the Quality management tools and statistical tools for the Production and Organizational developments through the Lectures and the Assignments.

What advice would you like to give to future participants? (I belonged to: Grupp 9)

Go to the lectures!

Be regular to the classes. Actively participate in lectures and tutorials. Revise every topic regularly say weekly. Start assignments well in time and don't extend them up to last minute. Try to read and explore more literature on Quality.

Is there anything else you would like to add?

Is there anything else you would like to add? (I belonged to: Grupp 8)

The course is really good and gives clear concept understanding through the Lectures and the Assignments.

Is there anything else you would like to add? (I belonged to: Grupp 9)

In general, the course was extremely knowledgeable, well organised and challenging in a positive way.

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

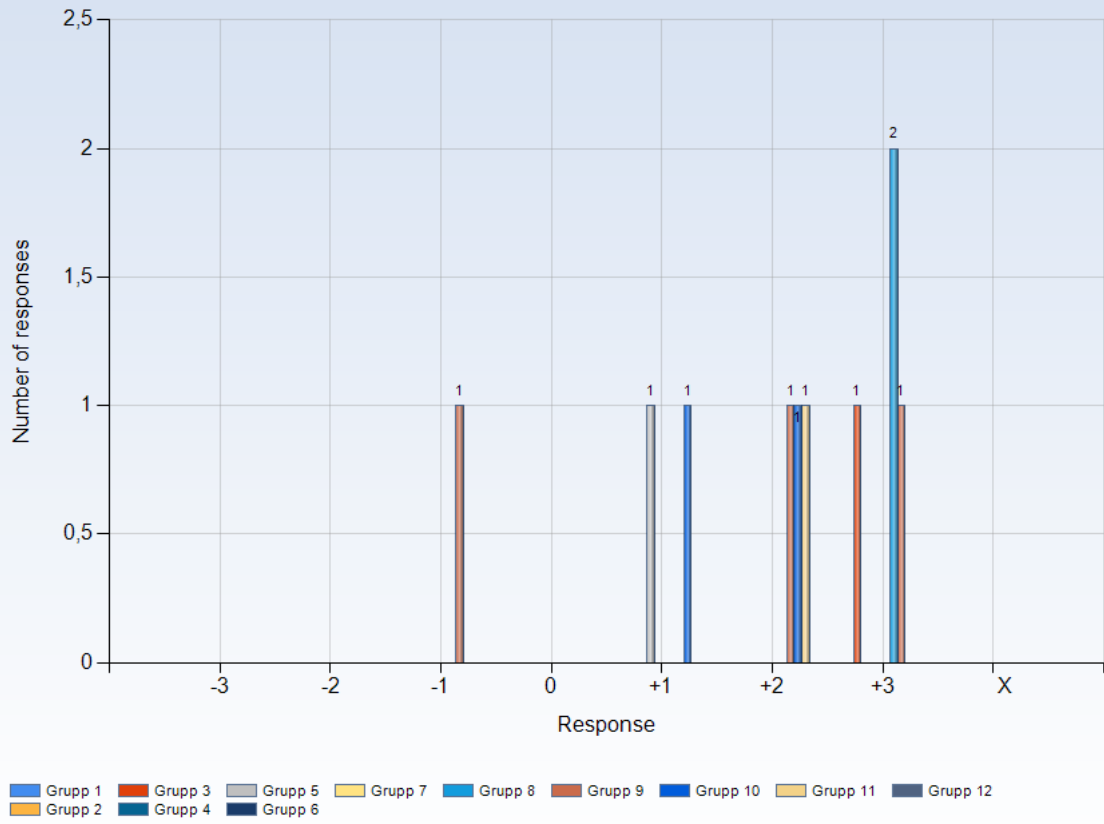
0 = I am neutral to the statement

+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement

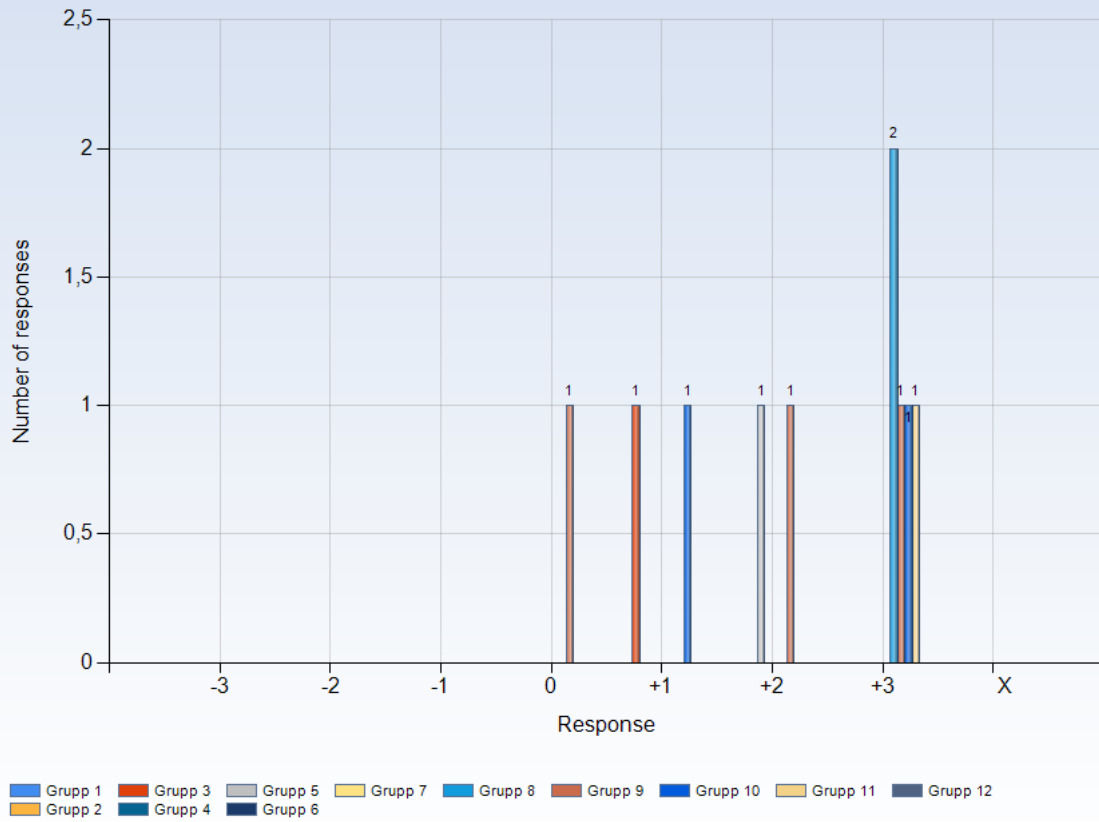
Note! If you want to compare the results between different groups on equal terms, you must normalize the number of responses with the size of the corresponding group. The size of each group is found in the first diagram in this report.

1. I worked with interesting issues



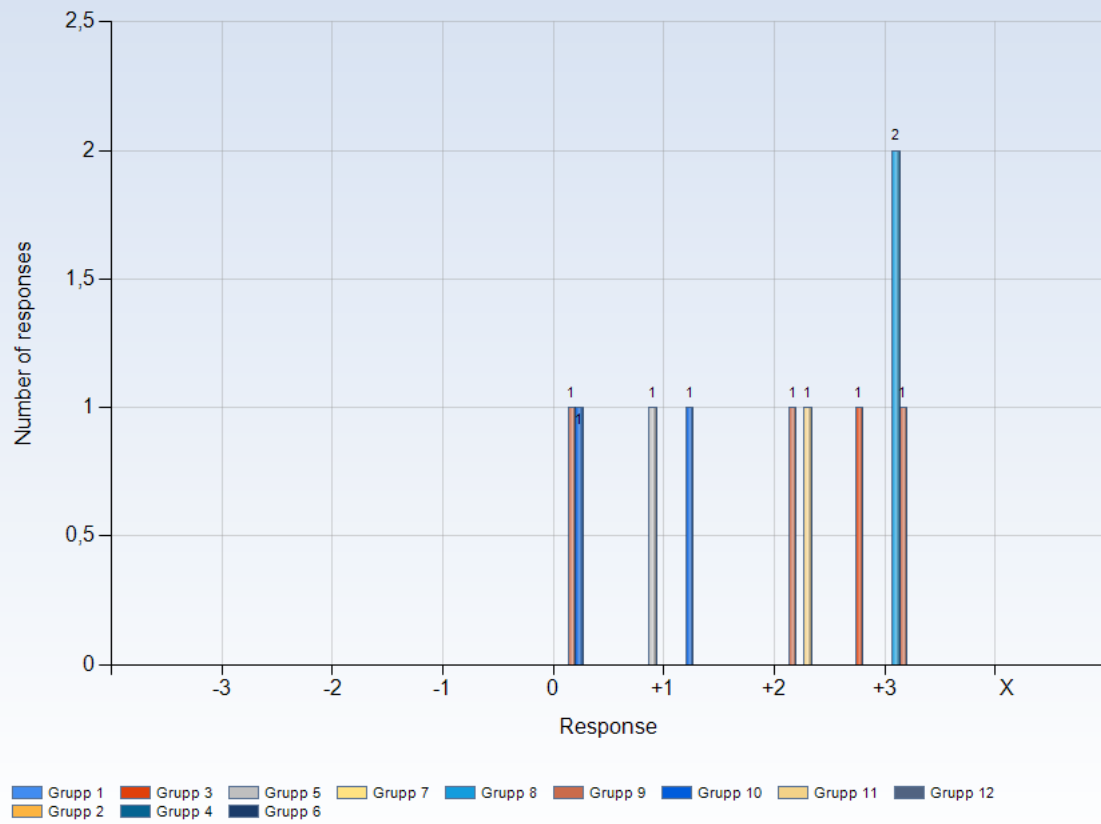
Comments

2. I explored parts of the subject on my own



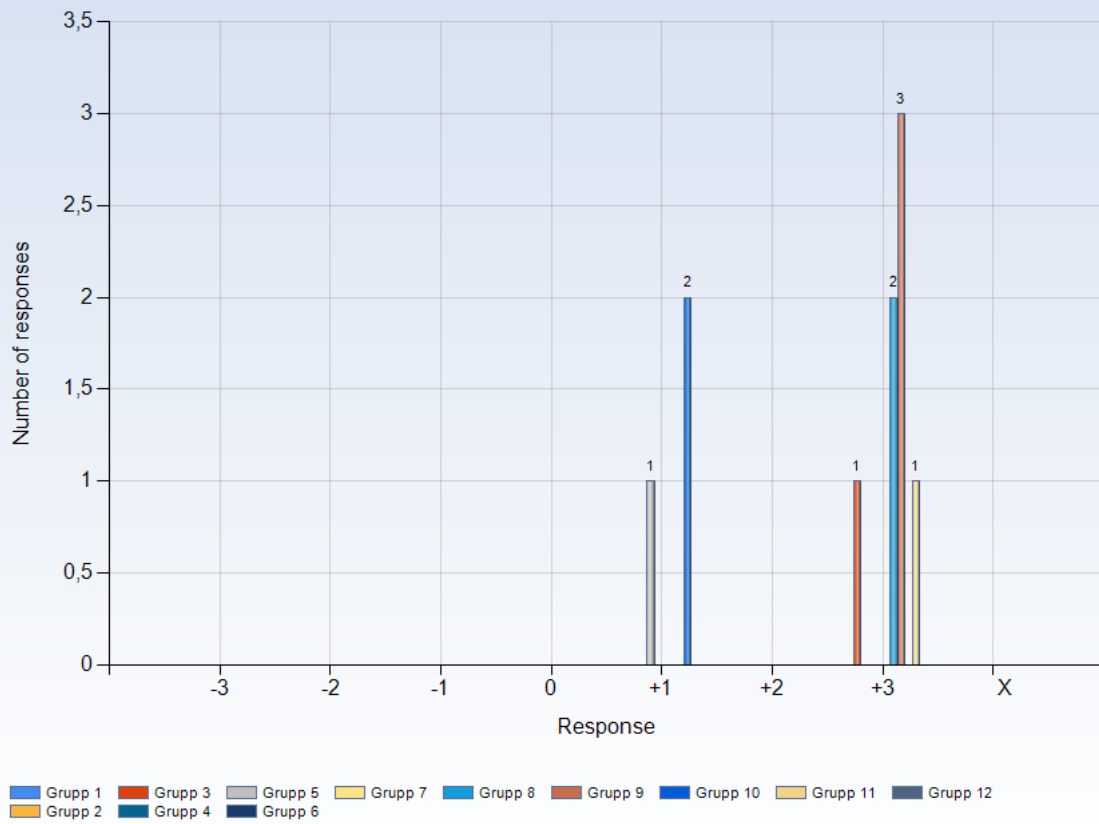
Comments

3. I was able to learn by trying out my own ideas



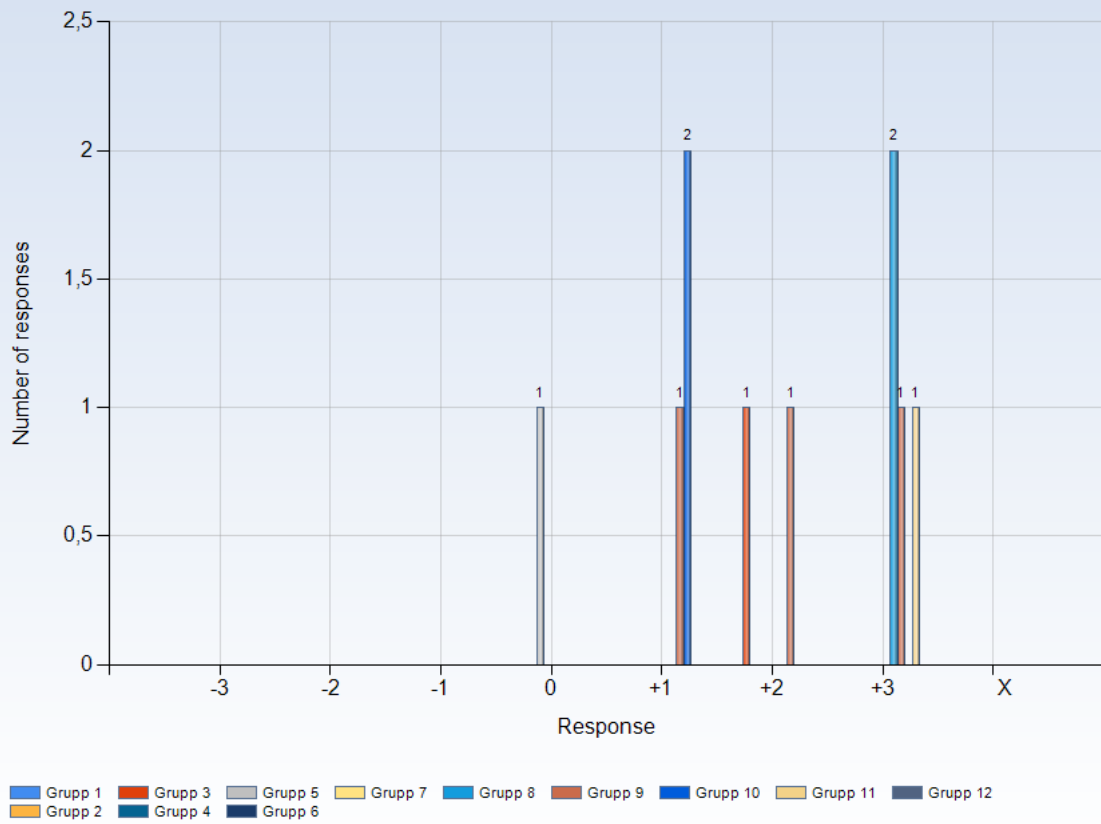
Comments

4. The course was challenging in a stimulating way



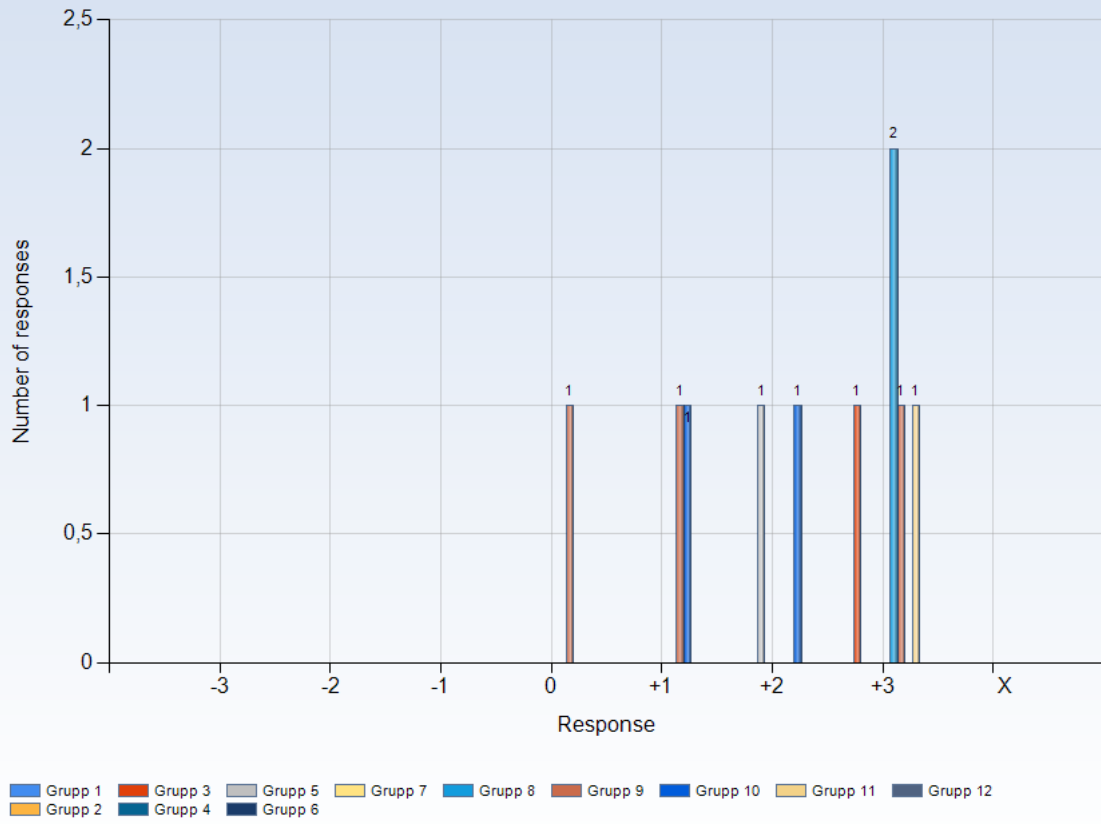
Comments

5. I felt togetherness with others on the course



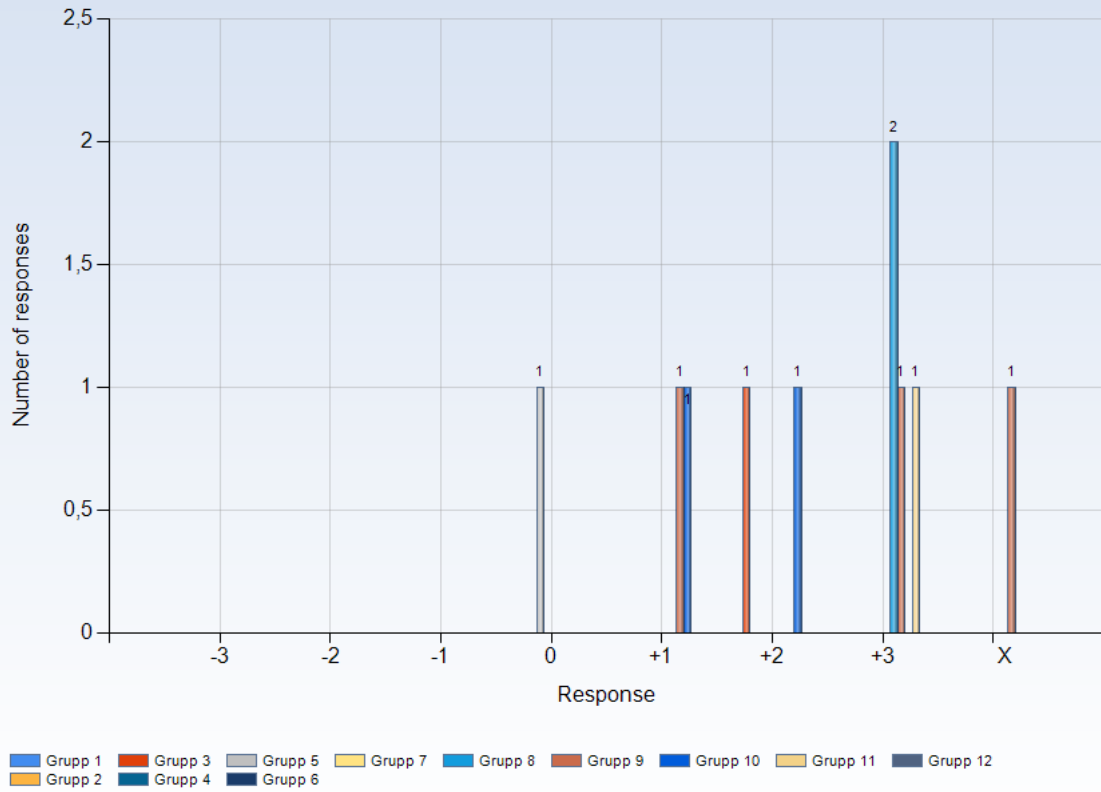
Comments

6. The atmosphere on the course was open and inclusive



Comments

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

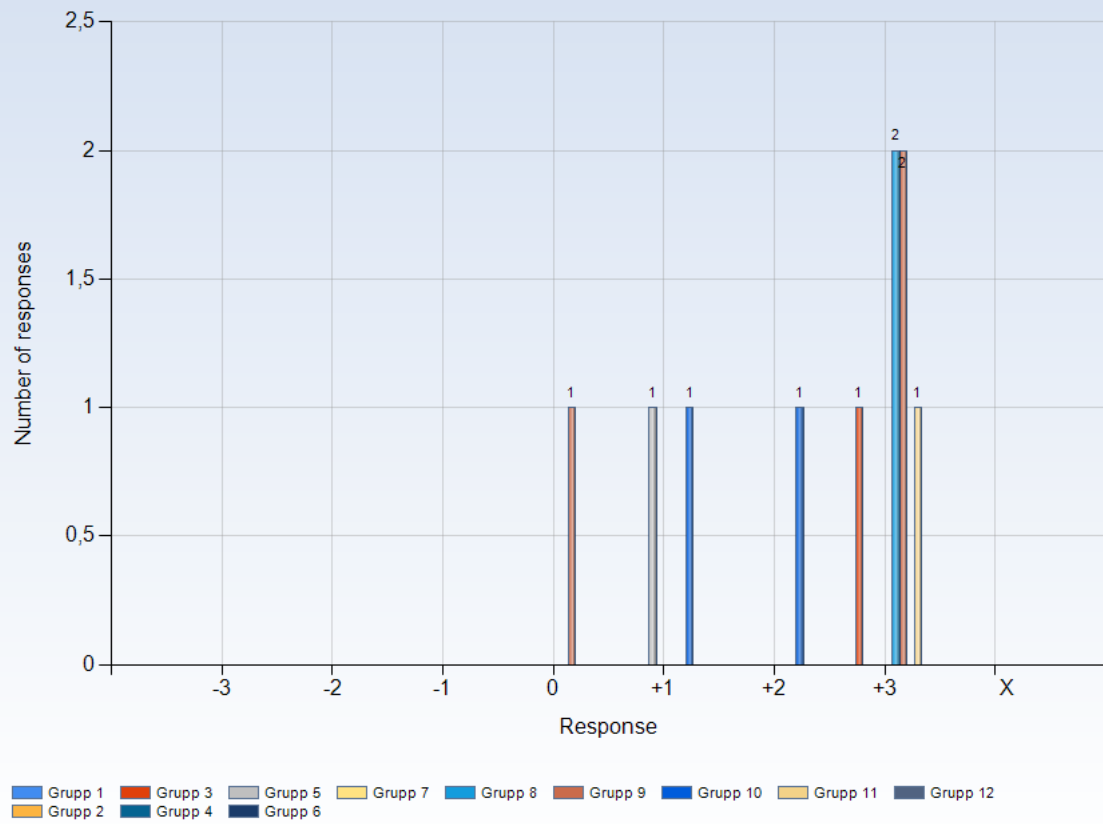


Comments

Comments (I belonged to: Grupp 9)

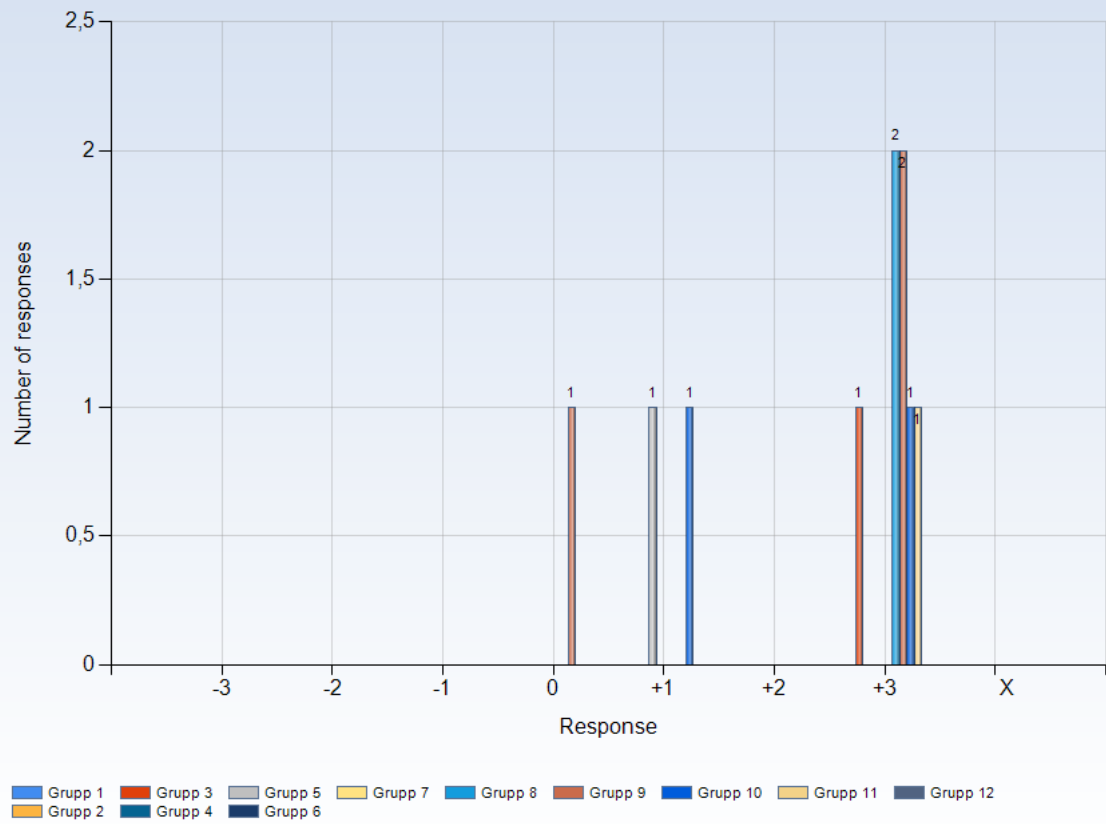
Didn't look at them :/

8. The course was organized in a way that supported my learning



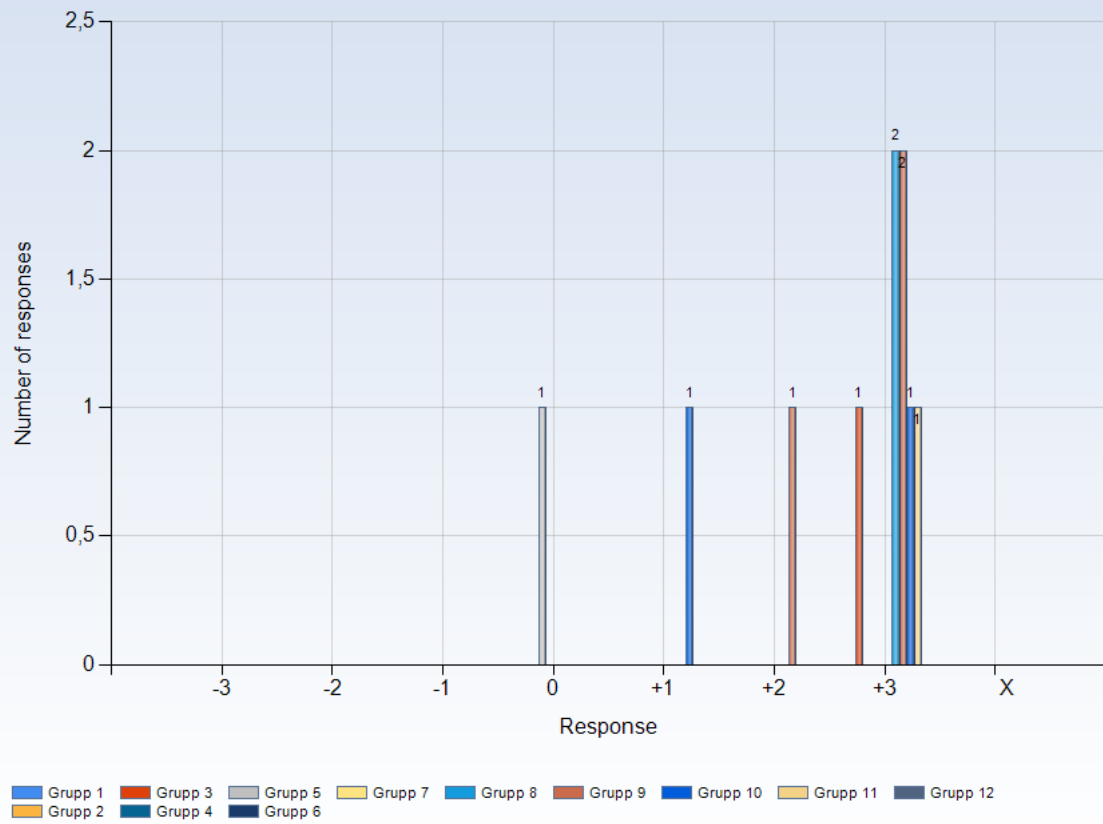
Comments

9. I understood what the teachers were talking about



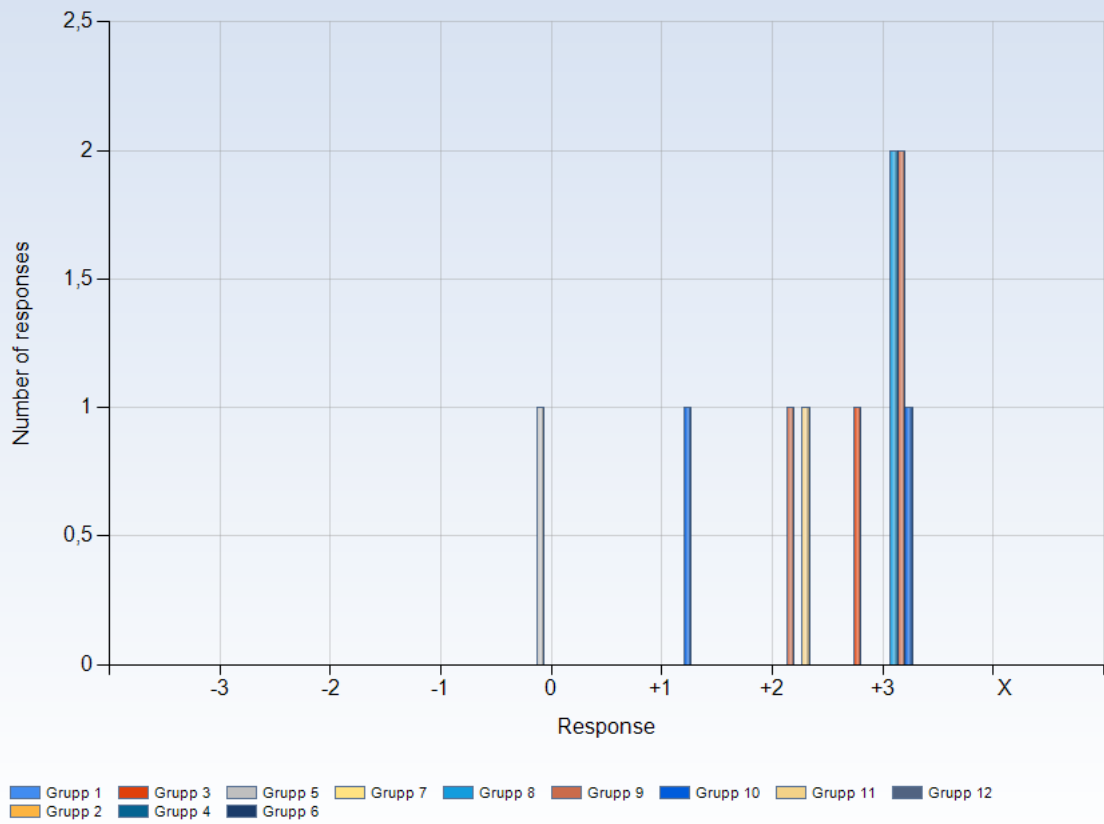
Comments

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



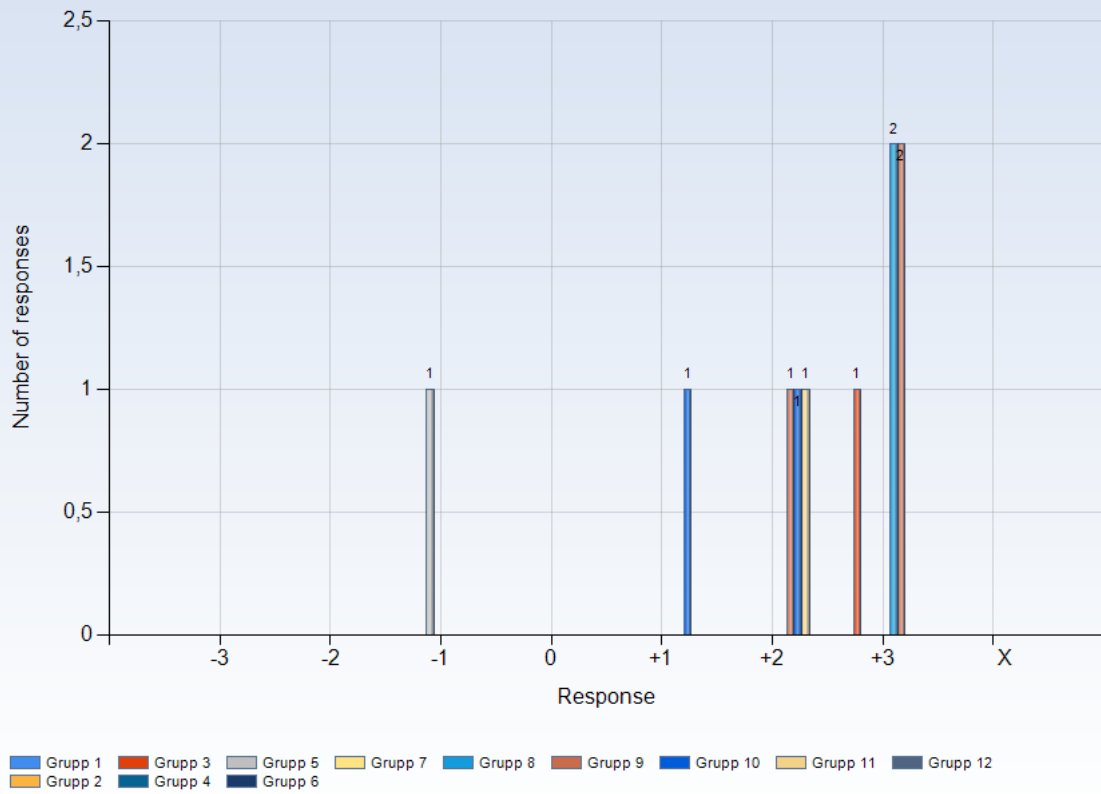
Comments

11. Understanding of key concepts had high priority



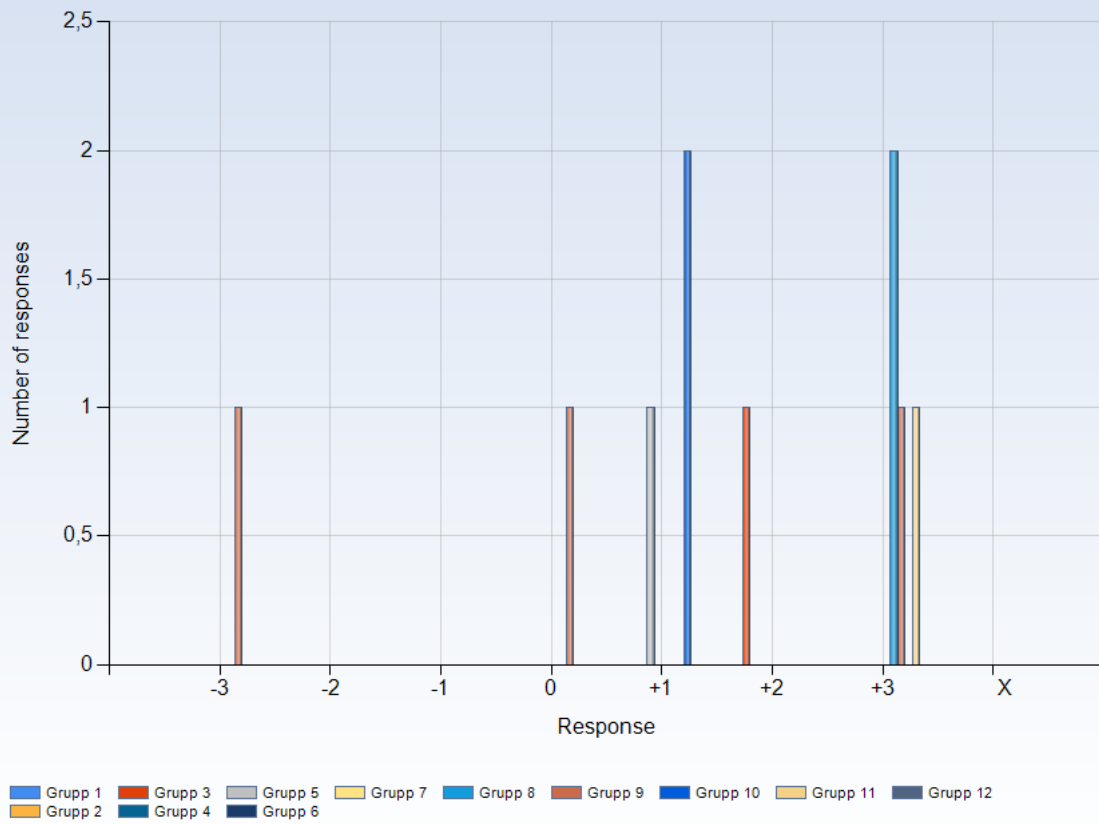
Comments

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



Comments

13. I understood what I was expected to learn in order to obtain a certain grade

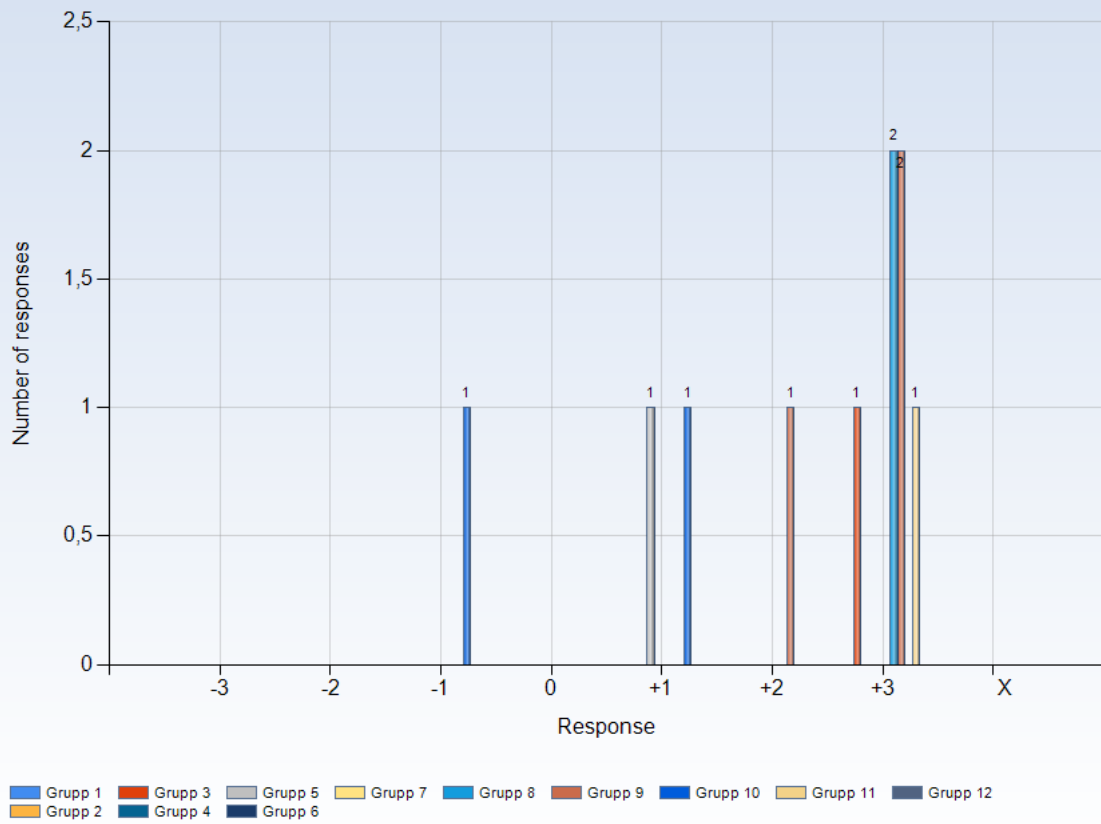


Comments

Comments (I belonged to: Grupp 9)

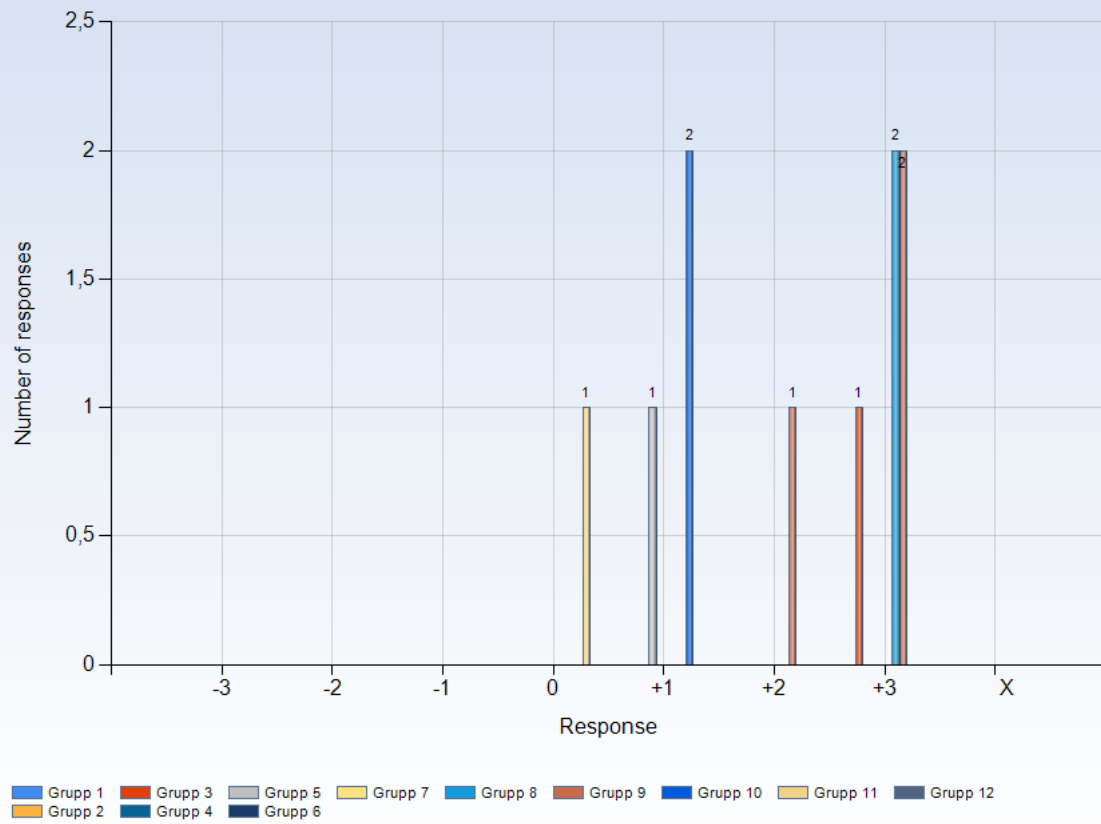
The different points for different grades were not even on the exam, nor in the course pm

14. I received regular feedback that helped me to see my progress



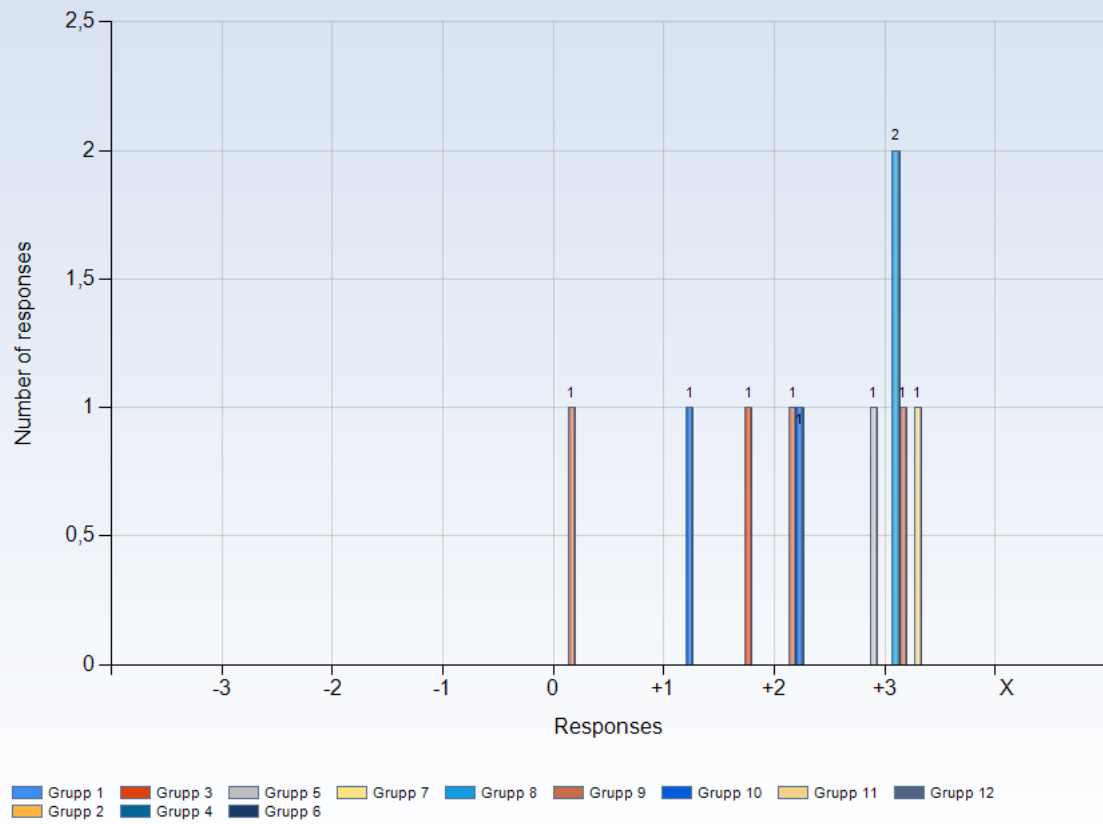
Comments

15. I could practice and receive feedback without being graded



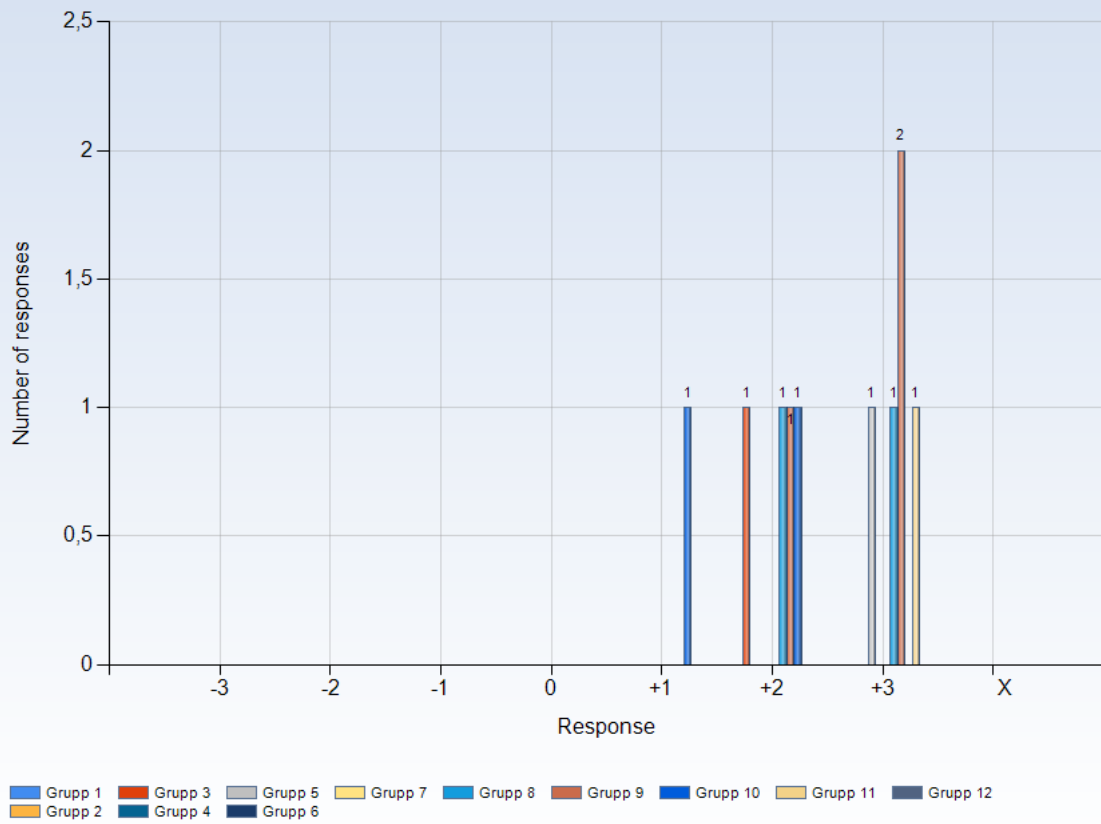
Comments

16. The assessment on the course was fair and honest



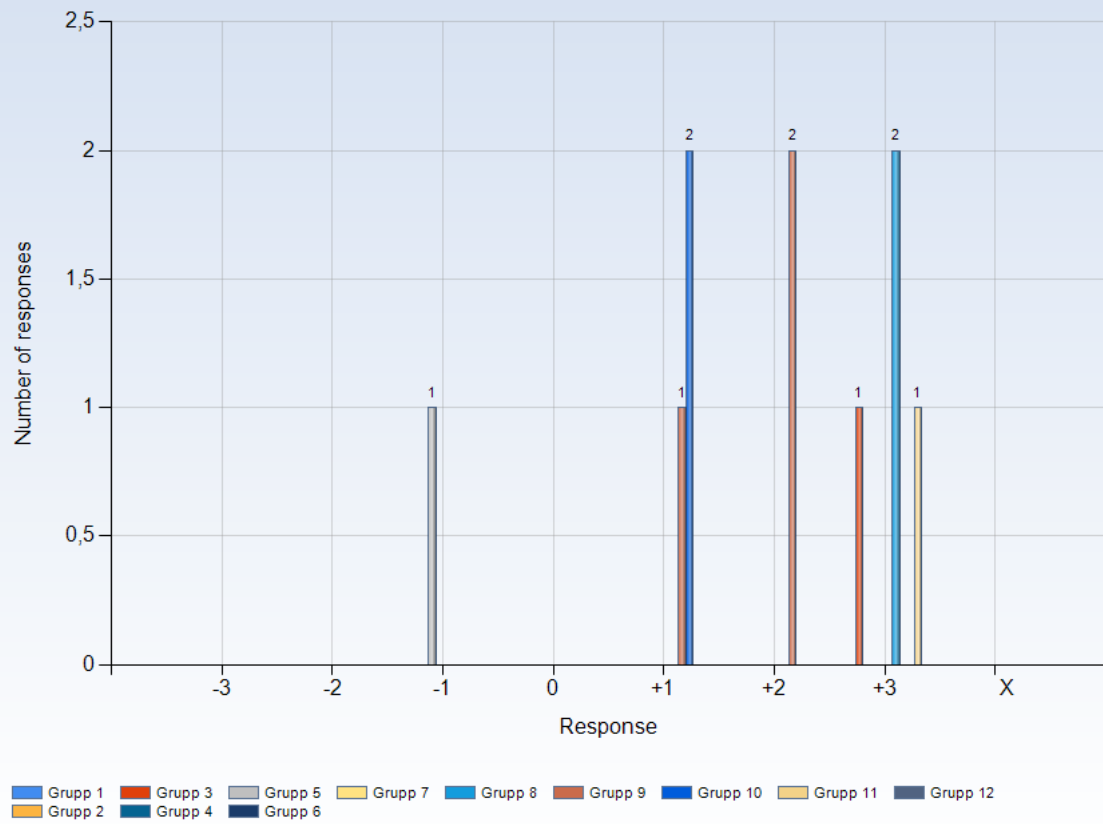
Comments

17. My background knowledge was sufficient to follow the course



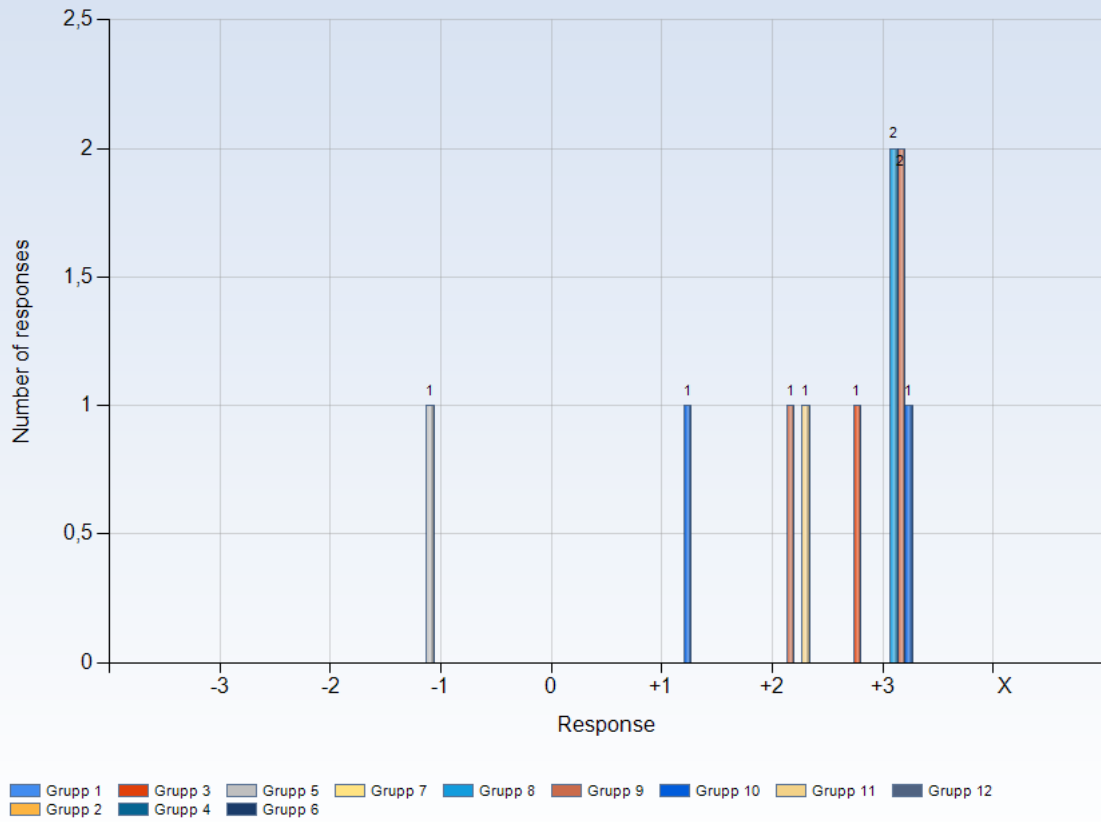
Comments

18. I regularly spent time to reflect on what I learned



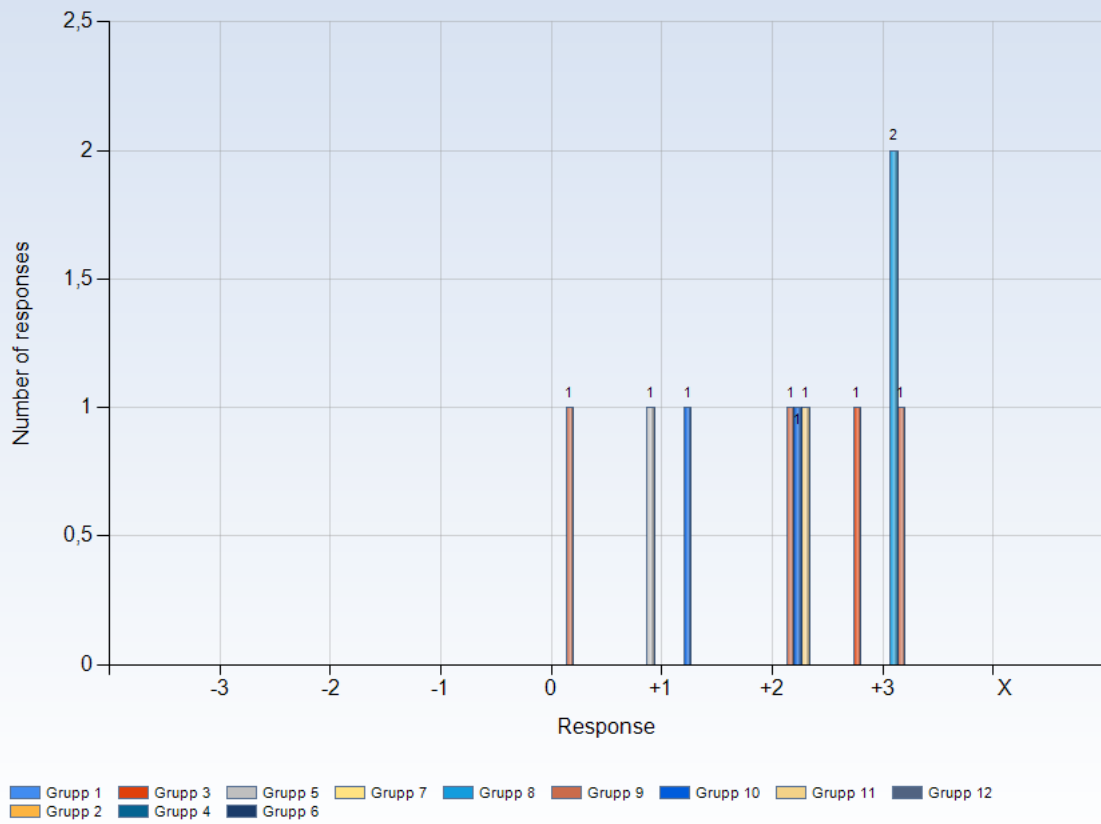
Comments

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



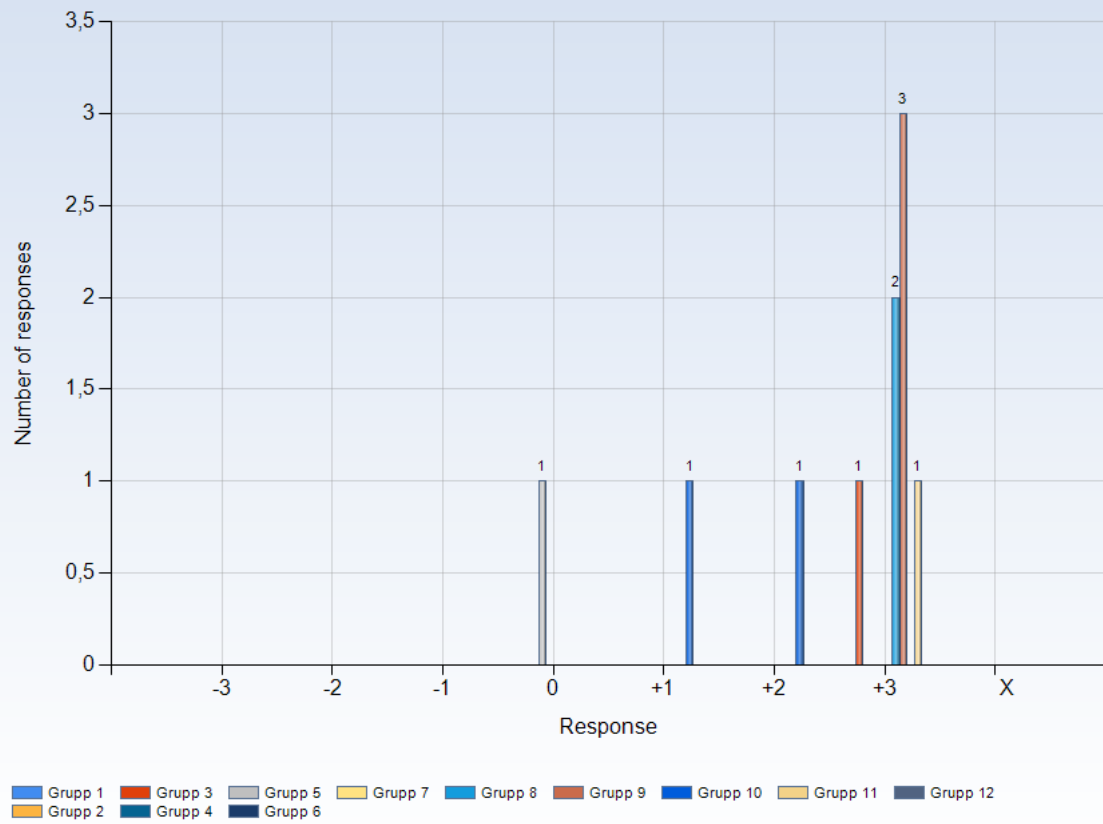
Comments

20. I had opportunities to influence the course activities



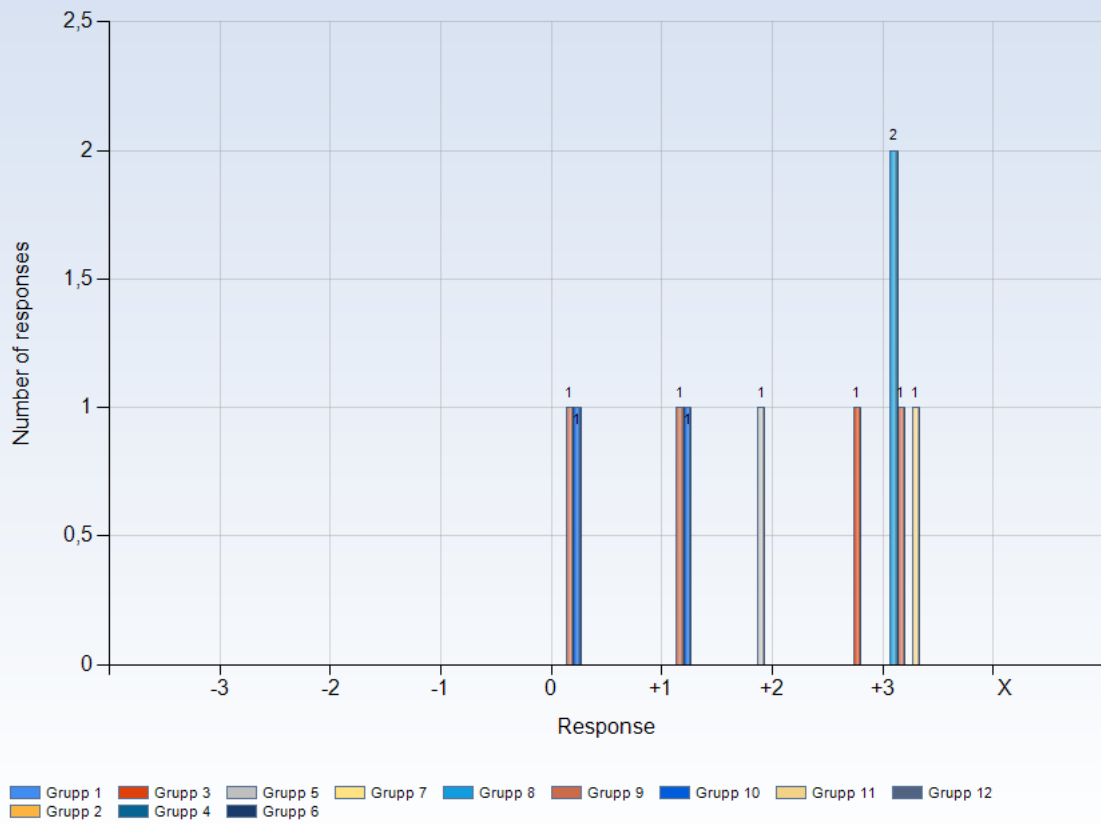
Comments

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