Course Analysis for SF2812 VT23

Course analysis carried out by (name, e-mail):
Jan Kronqvist, jankr@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.

This was my second time teaching the course, and I was a bit more familiar with all the processes. I have used a similar course evaluation process as last time which is described in more detail below.

The course evaluation is based mainly on the LEQ course evaluation and on the feedback received by students in the course committee. During the course, I met with the course committee consisting of 3 students from two different programs (electrical engineering and applied mathematics) and students of different genders. I believe having a mixture of students with different backgrounds on the committee is important to get a better overview of students' opinions and potential issues. However, there seems to be a slight bias, as the students on the committee tend to be very active and high-achieving students. This year, it was also a bit more difficult to find students who wanted to participate in the student committee compared to last year.

The discussion with the course committee was fruitful, and it was a friendly atmosphere where I believed the students felt comfortable giving honest feedback. The discussion clearly showed that the course works well overall and that the students are happy with it. The students also gave suggestions for some possible improvements for next year.

My long-term plan is to renew the course (update the course material and slightly adjust the course design). Therefore, I have actively asked the students for feedback during the course to get a better overview of the current state of the course. For example, I have discussed the course content and difficulty level with several of the students after/before the lectures and after project meetings. I have found that the informal short discussions with the students before/after the lectures are very useful for evaluating how the students were doing in the course (to check that the lecturing format was working and that the students were keeping up). The feedback was very useful and overall positive.

I have also held office hours where the students could meet with me, and we also had meetings with the student groups (3 students) to discuss the projects. During these meetings, I also discussed the course with the students and tried to identify any possible problems.

With regard to aspects of gender and students with disabilities, we have followed standard KTH practice. For example, students with disabilities are given support by Funka during exams according to KTH standard practice.
In the course, we have worked towards creating an inclusive atmosphere and have a good mixture of students in the projects. In the course committee, we had both male and female members. From the course evolution and meetings with students, we cannot identify any clear problems.

The reply frequency for the course evolution was not great (17.8%). Next year, I plan to push the students a bit more to submit the course evaluation. I think it would be better to send out the course evaluation before the last lecture and give the students a bit more time to submit their replies (then I can remind them about the course evaluation during the last lecture), and also send them a reminder to submit the course evaluation on Canvas. From talking to other teachers, I have learned that this reply frequency is, unfortunately, typical for mathematics courses.

To summarize, the course evaluation was based on feedback received by:
1. LEQ course evaluation form
2. Discussion with the course committee
3. More informal discussions with students (before/after lectures)
4. Discussion with students during office hour meetings and project meetings

DESCRIPTION OF MEETINGS WITH STUDENTS

Describe which meetings that has been arranged with students during the course and after its completion.

It is worth pointing out that many of the students taking the course are highly motivated and interested in the subject. One of the reasons behind this is that most students take the course during their 4th year, and for most students it is not a mandatory course but a course they have chosen. The high motivation level of the students also makes discussions/meetings with the students easier, as there are typically many students who actively participate in the course. By active participation, I mean actively asking questions and giving feedback, coming to most lectures, and overall taking an active role in learning. In the course, I believe I successfully created a friendly atmosphere with a low threshold for asking questions. Therefore, it is also easier to get feedback from the students. This has been the case both times I have taught the course, and I hope to continue the course in the same spirit.

The different forms of meetings with students are briefly described in the paragraphs below.
- Office hour meetings. During the course, I had regular meetings with students during office hours. The main purpose of these meetings is to give the students extra support and guidance. However, the meetings also gave me some insights into how students were doing in the course and if they were struggling with something. The office hours were held virtually over Zoom, and I believe this format worked well.

- Project meetings with students. As a part of the examination of the projects, I had individual meetings with each project group (3 students). The purpose of these meetings was to discuss how they had worked on the project (division of the work), how they solved the problems, to check that all the group members understood all parts of the project, and to discuss the self-evaluation that the students had submitted.

- I also met with the course committee consisting of 3 students. The meeting was held at the end of the course. This meeting was very fruitful, and the discussion clearly showed that the course works well. I would have preferred to have another meeting with the committee earlier in the course, and next year I plan to have a first meeting with the committee only a few weeks after the course starts. We didn't have a meeting earlier with the committee because, initially, there were not enough students interested in being on the committee.

COURSE DESIGN

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

I have followed the same course design as the year before, as it was working well and I'm relatively new to teaching this topic at KTH.

The course design is described briefly below, and as the design is very similar to last year (so is the description):

The course covers linear and integer programming, and the course focuses on two aspects:
1) For the course participant to develop a deeper understanding and intuition of the fundamental aspects (theory, methods, and algorithms) of linear and integer programming.
2) Have the students train and develop their problem-solving skills by I) studying classical optimization applications, II) having the students work on "real world" application in the projects, and III) giving the students experience in using state-of-the-art optimization algorithms and software.

The theory is presented during classical lectures, where I also encourage active participation by the students. This format has worked well, which can also be seen from the feedback by the students. I'm also happy with the students' engagement during these classical blackboard lectures, as they actively follow the lectures and ask questions. The students are also given preparatory questions before each lecture, which helps the students prepare before lectures. The theory is also practiced during exercise sessions, where the goal is to have the students work on solving exercises and are given guidance (and some exercises are solved on the blackboard by the course assistant). The exercise sessions could be improved, which I will describe in more detail in the "Analysis" section. The course had 13 "normal" lectures and 8 exercise sessions. During the lectures, I have used an Ipad as the blackboard and I believe this format has worked well (the students were also happy with this choice). I have also

uploaded the Ipad notes after the lectures, but I have been clear that these are not really intended as lecture notes. The students have actively taken notes during the lectures. I mainly use the blackboard (Ipad), and not lecture slides, as I believe it creates a more interactive environment and it automatically sets an appropriate speed for the students to follow. After the lecture I also gave the students access to some slides for each lecture as extra material.

The course is, to some extent, based on a classical textbook, which I recommend that the students get (the same book is also used in the nonlinear course). The book does not match the course perfectly, but it is ok. It also makes sense to use to use the same book as in SF2822. However, the book is more used as support material. During the lectures I mainly use the Ipad but also prepared some slides for some examples and my laptop for some demonstrations in GAMS and Matlab.

The course also focuses on two larger projects that the students need to complete and that the students work on together in groups of 3 (I will consider reducing the group size to 2). The projects are intended to replicate optimization tasks that the students might face in industry, and they are quite challenging. This year, I spent quite some time on renewing the project assignments to keep them up-to-date and interesting for the students. The projects are intended to give the students a practical hands-on understanding of the theory and methods covered in the course, and also to give the students experience of: working on a project, teamwork, problem-solving, using state-of-the-art optimization software, and presenting results.
The project groups were randomly assigned by me, and they worked in different groups for both projects. The reason for random assignments is that I believe it is valuable for the students to get experience from collaborating with different people on the project and not only work with their friends. I have received some feedback from the students about the projects, and I will discuss this in more detail in the "Students' Opinions" section.

The examination of the projects and the project presentations consist of 4 parts.
1. Each group hands in a written report that is corrected by me and the teaching assistant. The report is also checked for plagiarism.
2. Each student hands in a self-evaluation where they declare if they have contributed equally to the projects or if they have skipped the advanced questions (the projects consist of some mandatory base questions and some advanced questions that must be answered for the higher grades).
3. For each project, we have a presentation session, which consists of two parts. I) The students meet with students from other groups that have worked on the same task and discuss how they have solved the problem II) They present their solution to students that worked on different tasks.
4. Each group has a meeting with me and the TA to discuss how they have solved the problem, to test how well they have understood different parts of the project, and to give them feedback.

In the beginning of the course, the students are given nine theory questions that cover different topics of the course and are a bit more challenging to answer. The students are also informed that one of the theory questions will be in the exam. These questions focus on important theoretical concepts in linear optimization, and they are intended to have the students dive a bit deeper into the theory. We can give the students some advice on the questions, for example, where to find some additional information, but the students are expected to answer the theory questions on their own. I also provide information on which questions are covered in different parts of the course. I think the concept of having these theory questions works well, and it promotes self-learning for the students by giving them targeted tasks to study on their own.

In the course, we use the Canvas platform for distributing material, giving information about the course, and as a discussion platform. In all the courses I have taught, I have strived to use the exam as a learning opportunity. I have also used this approach in this course. In the exam, I typically present a new framework or interesting type of problem (that was not covered in the course), where the students need to use theory from the course but in a slightly different setting. The idea behind these exam questions is to have the students learn some important properties (that we did not have time to cover in the course), and, equally important to test their ability to apply the theory from the course. This is typically in the last and more challenging exam question. The idea of using the exam as an active learning opportunity has worked well, and I plan to develop this further. In the future, I intend to hold a "last lecture" after the exam to go through the exam with the students. I think this could significantly increase the learning outcome from the exam. This creates some logistic challenges, but I definitely think it would be worth the effort.

This year, the course was taught by:
- Teacher/course responsible, Jan Kronqvist (Assistant professor)
- There was also one Teaching Assistant in the course.

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?

First, considering the course is 7.5 credits, the expected level should be approximately 20h/week.

The student's workload is difficult to assess from the course evaluation as the response frequency is quite low. A few students have reported that they spend significantly more time 30-32 and 27-29 hours per week. But, there are also a few students who have reported that they spend significantly less time, about 10 hours per week. There are also some students who have reported numbers very close to 20h/week. Based on these replies, the workload seems appropriate.

From discussions with the students, the workload also seems to be appropriate.

I would like to offer some advanced reading/exercises for the highly motivated top students. This year, there were some exceptionally strong students and I think they would have appreciated such material. It is not clear how to best integrate such advanced material, as it would not really be a part of the course. This is something I will investigate how it can be used int 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?

Overall I would say that the students did very well, and several students got top grades in the course. The results are similar to previous years.

When analyzing the students' results, it is important to keep in mind that this is a master's course that the students have chosen. For the students in the Optimization and Systems Theory track, this can be considered one of the core courses. But, many students are taking the course from other tracks. The students' motivation is overall very high in the course, and this obviously reflected in the grades. From my impression, the students find the course interesting and relevant for their future. Therefore, it is natural that the students perform well in the course.

33 students took the first exam, and 29 of the students passed it. In the grade distribution, there were two clear peaks. One at grade "C" with 10 students, and another at grade "A" with 10 students. The rest of the students were quite evenly distributed between the other grades. This also supports my observation that there is one quite big group of students who really focus on the course and perform great. This is also visible during the lectures, based on the students' activity and the questions that they ask. This situation was similar last year. I believe that it is quite natural to have one group of very active students who do great in the course, as this is one of the core courses for students focusing on an optimization track (which they can choose in both Mathematics and Electrical Engineering).

In the projects the students overall did well, and many of the students also completed the advanced questions (needed for higher grades). My impression, and also clear from the students' feedback, is that the students found the projects very interesting. Many of the students were excited to discuss the projects and how they had solved the problems.

To summarize, as a teacher I am happy with the results.

STUDENTS´ANSWERS TO OPEN QUESTIONS

What does students say in response to the open questions?

The students overall seemed very satisfied with the course. There were several very positive comments. Below are a few examples:

- "Jan is one of the best lecturers I have had at KTH". (Answer to the question "What was the best aspect of the course?")
- "Clear communication, good lectures"

- "Clear communication regarding expected learning outcomes, as well as all information being collected in one place (including lecture notes) makes it much easier for me with adhd."
- "The projects and how they were organized. I often found it hard to reach out to people in master's courses, but having random groups really helped, especially since we also had random groups for discussions at the end of the projects. I also found the project seminars really good. Most often, I don't get anything out of doing presentations, neither presenting myself nor listening to other groups. With this way of doing presentations, I had really interesting and giving discussions with my classmates where we all could just focus on learning from each other, rather than being judged in front of the whole class.
And also Jan's engagement in the course! It really felt like he wanted us to learn as much as possible!
"

Based on the replies, it is clear that the lecture format and projects are working well!

SUMMARY OF STUDENTS' OPINIONS

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

As mentioned above, the students are happy with the course overall. This is clear from the positive feedback in the course analysis and feedback from the course committee.

However, the feedback also identified one aspect of the course that could be improved. The replies from the course analysis show that the exercise sessions can be improved, and this was mentioned in several of them. The course committee also gave this feedback, and we discussed how this could be improved. I will actively work on improving the format of the exercise sessions and provide the TA with more support and guidance for the exercise sessions.

The student feedback also mentions that the random assignment of students into groups is positive. Together with the course committee, we discussed the grading of the projects and how this is accounted for in the final grade. It was mentioned that this system could give an unfair advantage if a student is "lucky" and assigned to a group of very strong students. However, the impact of "being lucky" is somewhat controlled by the fact that the students are reassigned to new random groups. We discussed this, but there were no concrete suggestions for improvements (there are also clear advantages of the current system).

To summarize, the replies show that the students are happy with the course and they consider it to be a valuable 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.

I must say that I very much enjoy teaching the course. It is a pleasure to teach a course when you have highly motivated students. The course is also close to my own research interests. I think the students also value that I give them some examples from the "cutting edge" of research in the field and tell them how the course relates to the research.

The course covers many topics that I believe the students find interesting and useful. During the course, I got many very good questions from the students showing that they were clearly interested in the topics. The students' results also clearly show that there is a relatively large group of students who perform great in the course. This was hardly surprising as there was also a group of very active students who actively participated in the lectures and asked highly relevant questions.

As a teacher, I am very happy with the course.

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 be? Are there significant differences in experience between:
- students identifying as female/male?
- international/national students?
- students with/without disabilities?

The main weakness identified in the course was the exercise sessions. The student participation in the exercise sessions was quite low. Some students told me that they preferred to work on the exercise questions on their own. I will focus on improving this to the next year. I plan to renew the

exercise session format and provide the TA with more support and guidance to improve the exercise sessions. I will also investigate different options to make sure that the students feel that there is a clear value in participating in the exercise sessions.

With regards to the main course material, I have found that it would make sense to spend a bit more time on the material for "Stochastic Programming". This was also mentioned in the discussion with the course committee. This can be done by spending slightly less time on the basic material covered in the first three lectures. Compared to last year, I believe the learning outcome for the topic "LP Duality" duality was improved this year. This is nice, as I identified this as one area where I hoped to improve the learning outcome.

Based on the results of the exam and course evaluation, I cannot see that any specific group of students would be stronger or weaker in the course. From my interactions with the students, I also got the impression that the course format is working well for all the students. One student with ADHD even mentioned in the course evaluation that the course format worked well for them.

The reply frequency for the course evaluation was a bit disappointing. Next year, I will try to encourage more students to submit the course evaluation as a higher response frequency would be useful.

PRIORITIZED COURSE DEVELOPMENT

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

The overall teaching format is clearly working well. The students are learning and succeeding well in satisfying the intended learning outcomes.

My main priority will be on 1) improving the exercise sessions to make sure that there is a clear value in participating in the exercise sessions, and 2) updating the
course content to make sure that it is relevant, and up-to-date.

Below is a list with the main development items:
- Together with the TA work on updating the format for the exercise sessions. Also, provide the TA with more guidance and support.
- Continue updating the course projects. Several projects have already been updated for the course this year. This work is straightforward (although time-consuming), but it is important that the students continue to feel that the projects are up-to-date and relevant.
- Investigating how the course content could be updated to best fit the student's needs and complement the other courses (avoid unnecessary overlaps). This work has already started and continues.
- Include a bit more repetition/exercises on "Stochastic Programming".

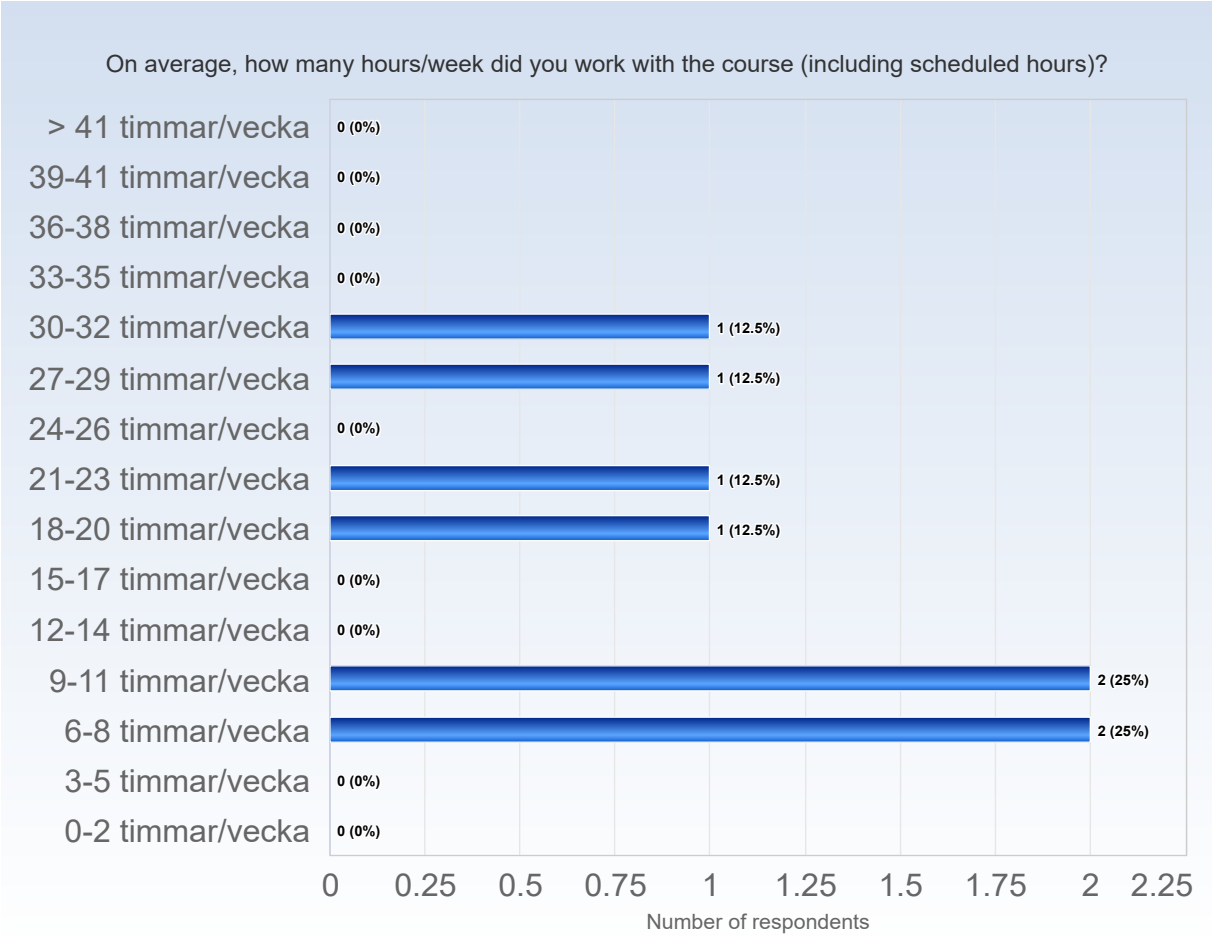
The long-term goal is to renew the course material more substantially. However, the main challenge in renewing the material is that it has to be coordinated with the other core courses in the Optimization and Systems Theory track. We have started this work, and together with the other teachers we have started mapping out what material is covered in which course and how they link together. My goal with the renewal is to optimize the learning outcome for students who take all the optimization courses and make sure all the material is relevant, up-to-date, and that we have a suitable degree of overlapping. Specifically for this course (SF2812), I would like to put more focus on "Decomposition techniques" and "Integer Programming".

Attached you will find the results from the course evaluation.

SF2812 - 2023-03-21

Antal respondenter: 45
Antal svar: 8
Svarsfrekvens: 17,78 %

ESTIMATED WORKLOAD



Comments

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

A bigger batch of work was done in the beginning of the course while the hours spent on the later part of the course was lower

Comments (I worked: 9-11 timmar/vecka)

Going to the lectures was very nice, just attending made a big difference. The exercises where worse and francly a waste of time. The TA just wrote on the board without explaining and answered very short and somewhat rude to questions about the material. After attending a couple exercises many students (and myself) decided to just look at the exercise notes instead.

Course was well taught. It needed the required time, don't wait for the last minute

Comments (I worked: 21-23 timmar/vecka)

Reasonable workload.

Comments (I worked: 27-29 timmar/vecka)

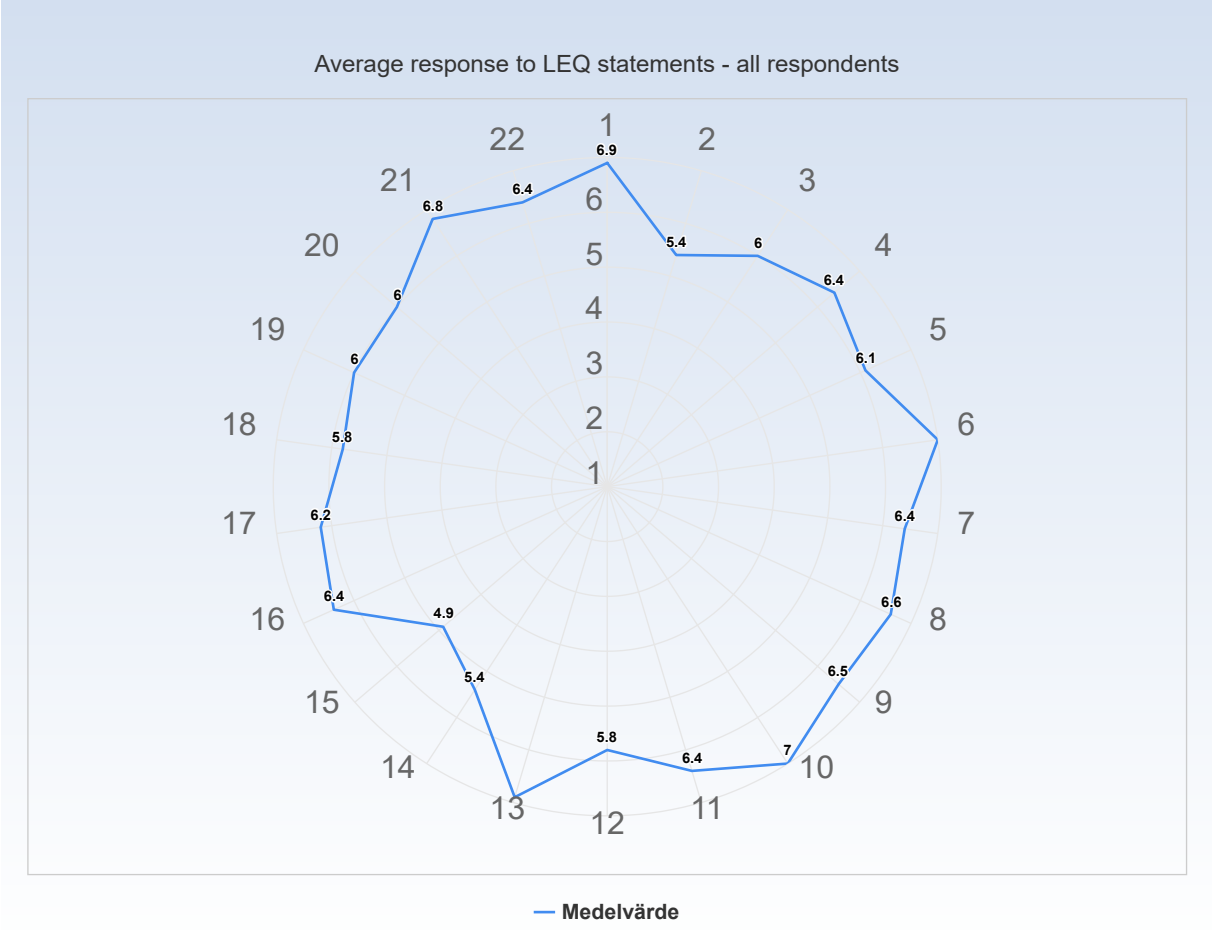
I found the projects both very challenging and interesting, which resulted in me putting a lot of time into them

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

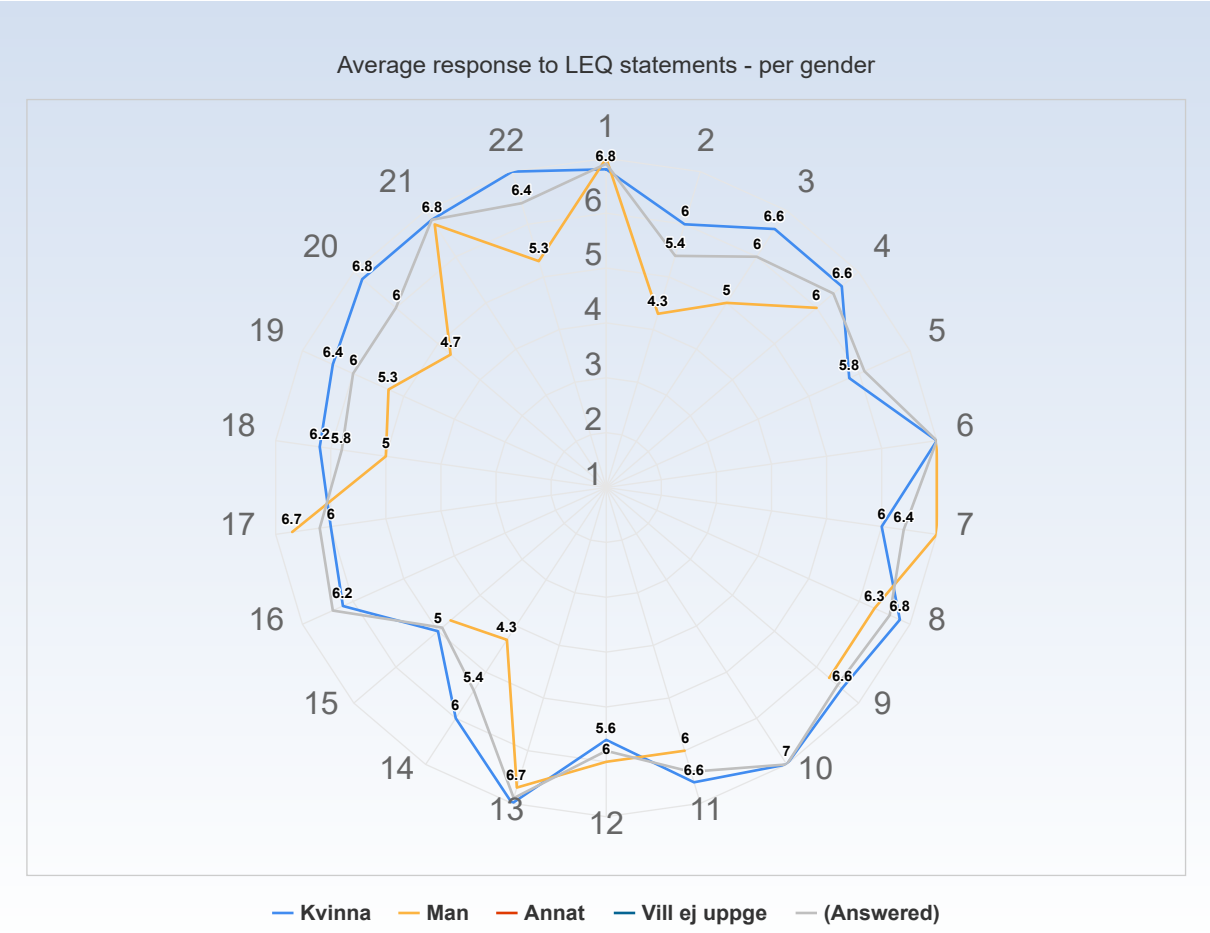
Bain, K. (2004). *What the Best College Teachers Do*, Chapter 5, pp. 98-134. Cambridge: Harvard University Press.

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.

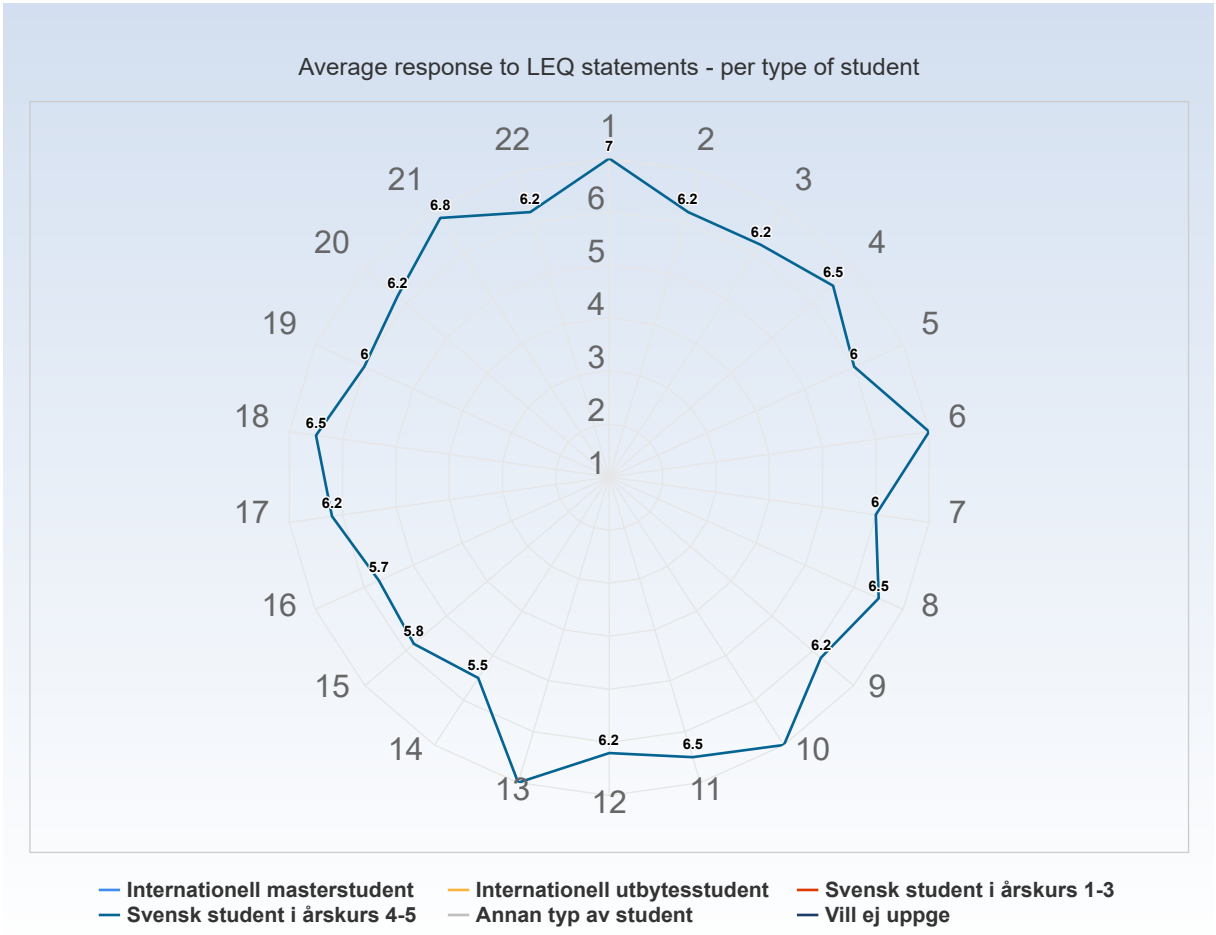
Kember, K. & McNaught, C. (2007). *Enhancing University Teaching: Lessons from Research into Award-Winning Teachers*, Chapter 5, pp. 31-40. Abingdon: Routledge.

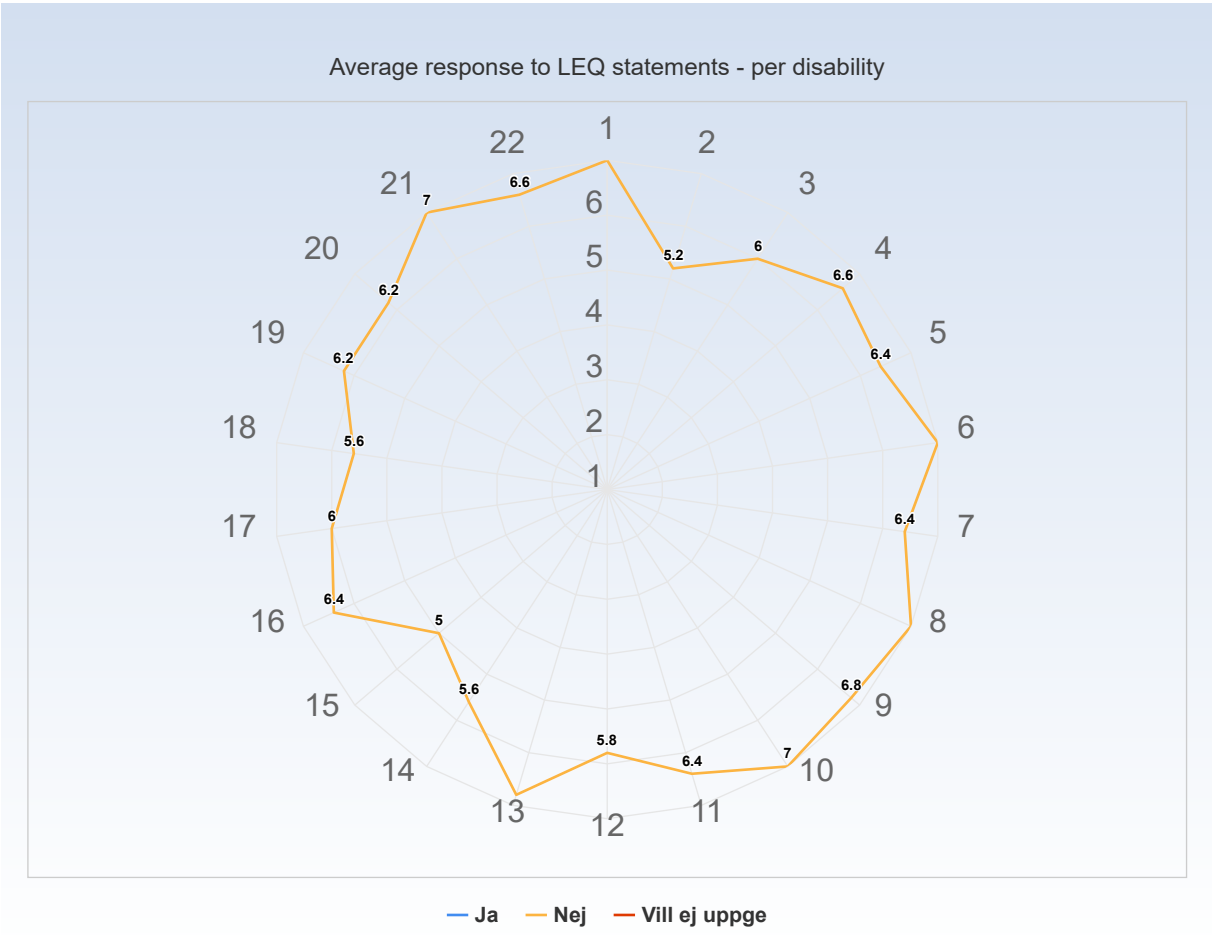
Ramsden, P. (2003). *Learning to Teach in Higher Education*, Chapter 6, pp. 84-105. New York: RoutledgeFalmer.



Comments

Comments (I am: Kvinna)
Nothing to report


Average response to LEQ statements - per type of student
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
7
6.2
6.2
6.5
6
6
6.5
6.2
6
6.8
6.2
6.2
6
6.5
6.2
5.7
5.8
5.5
6.2
6.5
Internationell masterstudent
Internationell utbytesstudent
Svensk student i årskurs 1-3
Svensk student i årskurs 4-5
Annan typ av student
Vill ej uppge



Comments

Comments (My response was: Ja)
Clear communication regarding expected learning outcomes, as well as all information being collected in one place (including lecture notes) makes it much easier for me with adhd. This course did all these things, so that was good.
ADHD

GENERAL QUESTIONS

What was the best aspect of the course?

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

Group discussion

The projects. They were challenging but at the same time extremely fun to work on and knowledge on different parts of the course was needed and tied to a "real" example problem

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

Lectures, Jan is one of the best lecturers I have had at KTH.

What was the best aspect of the course? (I worked: 21-23 timmar/vecka)

Clear communication, good lectures

What was the best aspect of the course? (I worked: 27-29 timmar/vecka)

The projects and how they were organized. I often found it hard to reach out to people in master's courses, but having random groups really helped, especially since we also had random groups for discussions at the end of the projects. I also found the project seminars really good. Most often, I don't get anything out of doing presentations, neither presenting myself nor listening to other groups. With this way of doing presentations, I had really interesting and giving discussions with my classmates where we all could just focus on learning from each other, rather than being judged in front of the whole class.

And also Jan's engagement in the course! It really felt like he wanted us to learn as much as possible!

What would you suggest to improve?

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

Exercise session, project sometimes not too challenging

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

The TA and exercise situation

What would you suggest to improve? (I worked: 27-29 timmar/vecka)

I found the exercise sessions kind of weird since the teaching assistant almost didn't say anything during the whole session. It would have been really helpful if the assistant explained why and how she did the calculations. She had really really good notes, and wrote really carefully on the blackboard, which was really good, but I would have appreciated some more interaction with the students.

What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)

go to lectures

What advice would you like to give to future participants? (I worked: 21-23 timmar/vecka)

Attend lectures

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 27-29 timmar/vecka)

I'm not sure about this, but I really got a feeling that the level of the different projects was kind of unequal, where some groups got projects that they could just implement right away from the lecture notes, while other groups had to spend a lot of hours googling before they could get started. I understand that it is hard for a teacher to know what will be hard for students to implement and not since everything is so "easy" for the teacher, so maybe there is no way to solve this. Anyway, the projects were really interesting and I learned a lot from them.

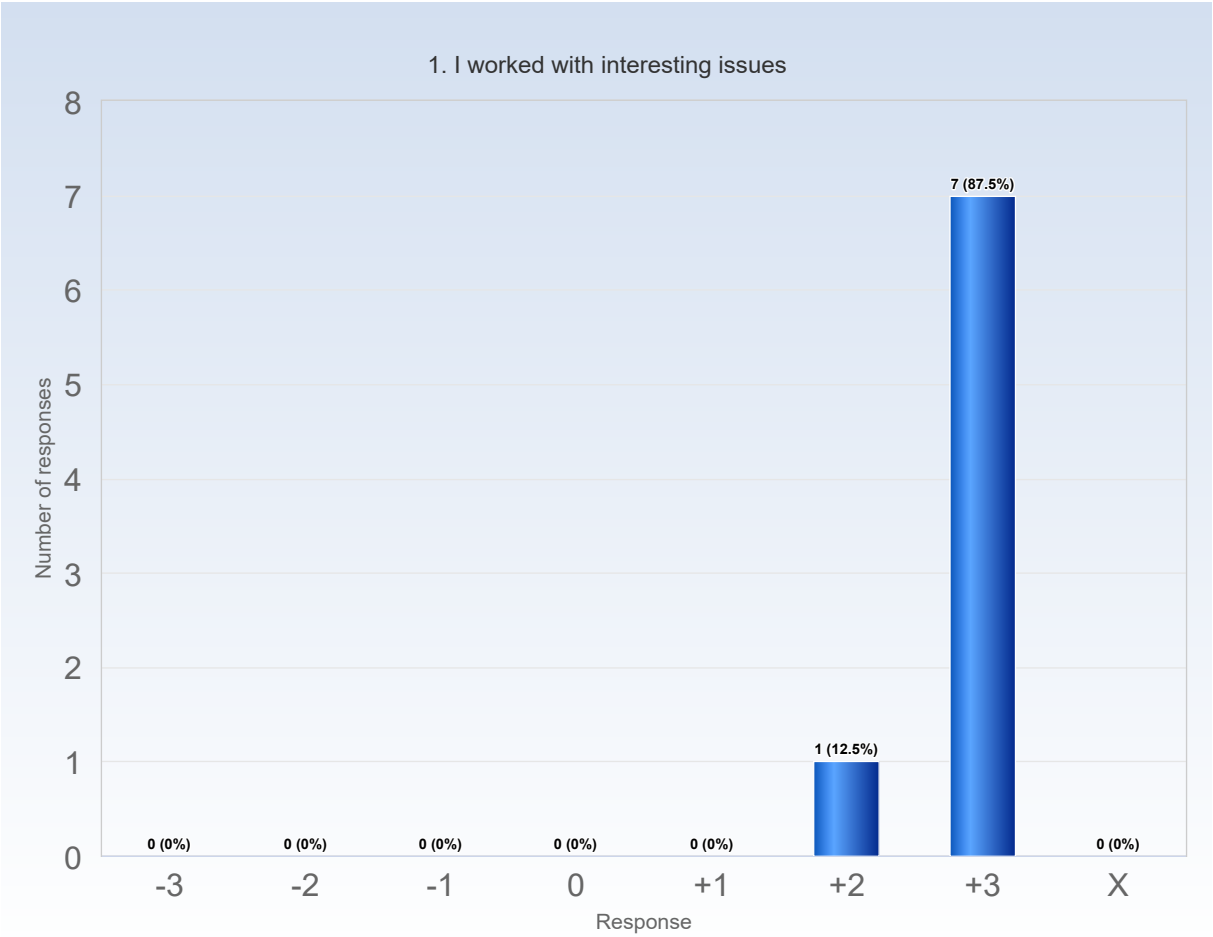
SPECIFIC QUESTIONS

RESPONSE DATA

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

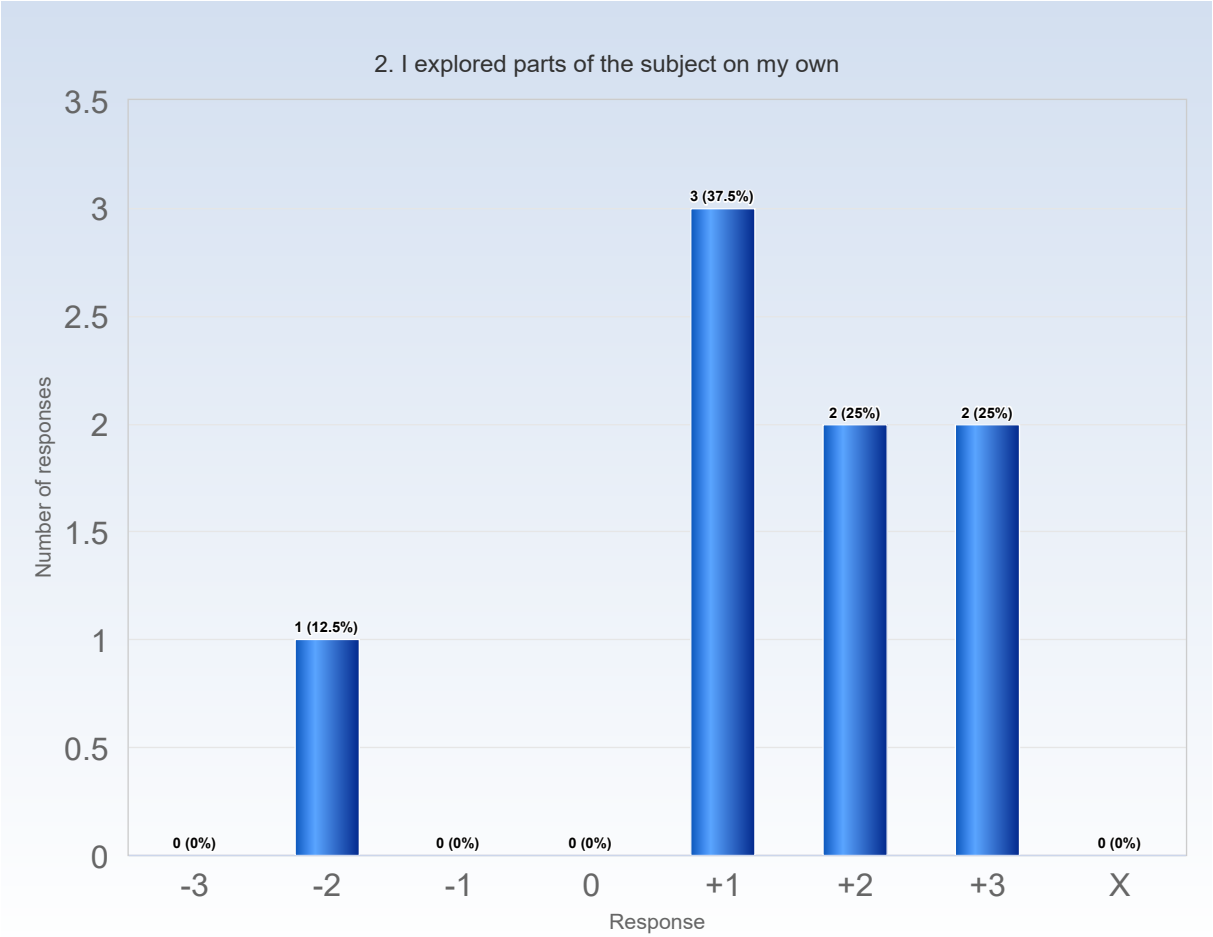
-3 = No, I strongly disagree with the statement
0 = I am neutral to the statement
+3 = Yes, I strongly agree with the statement

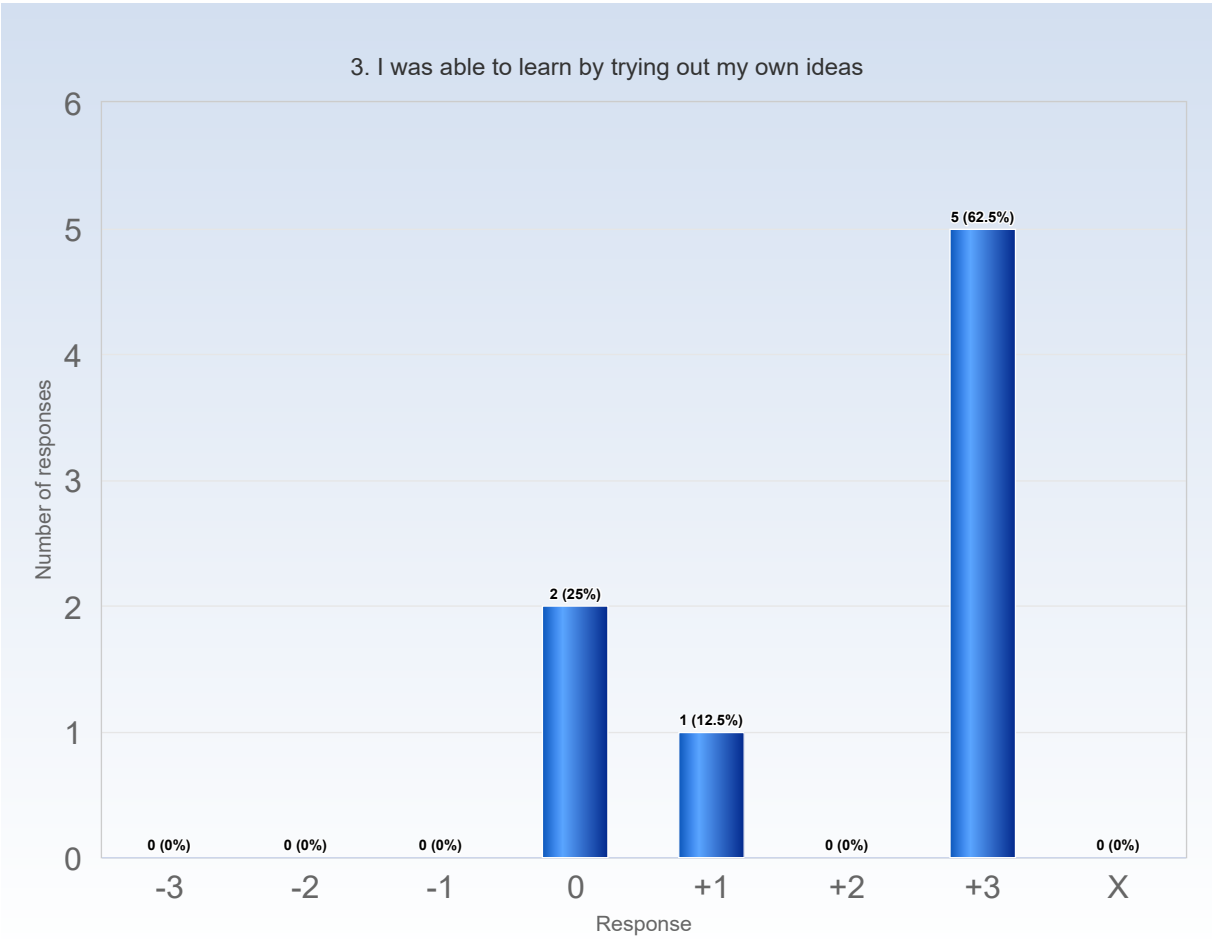
X = I decline to take a position on the statement

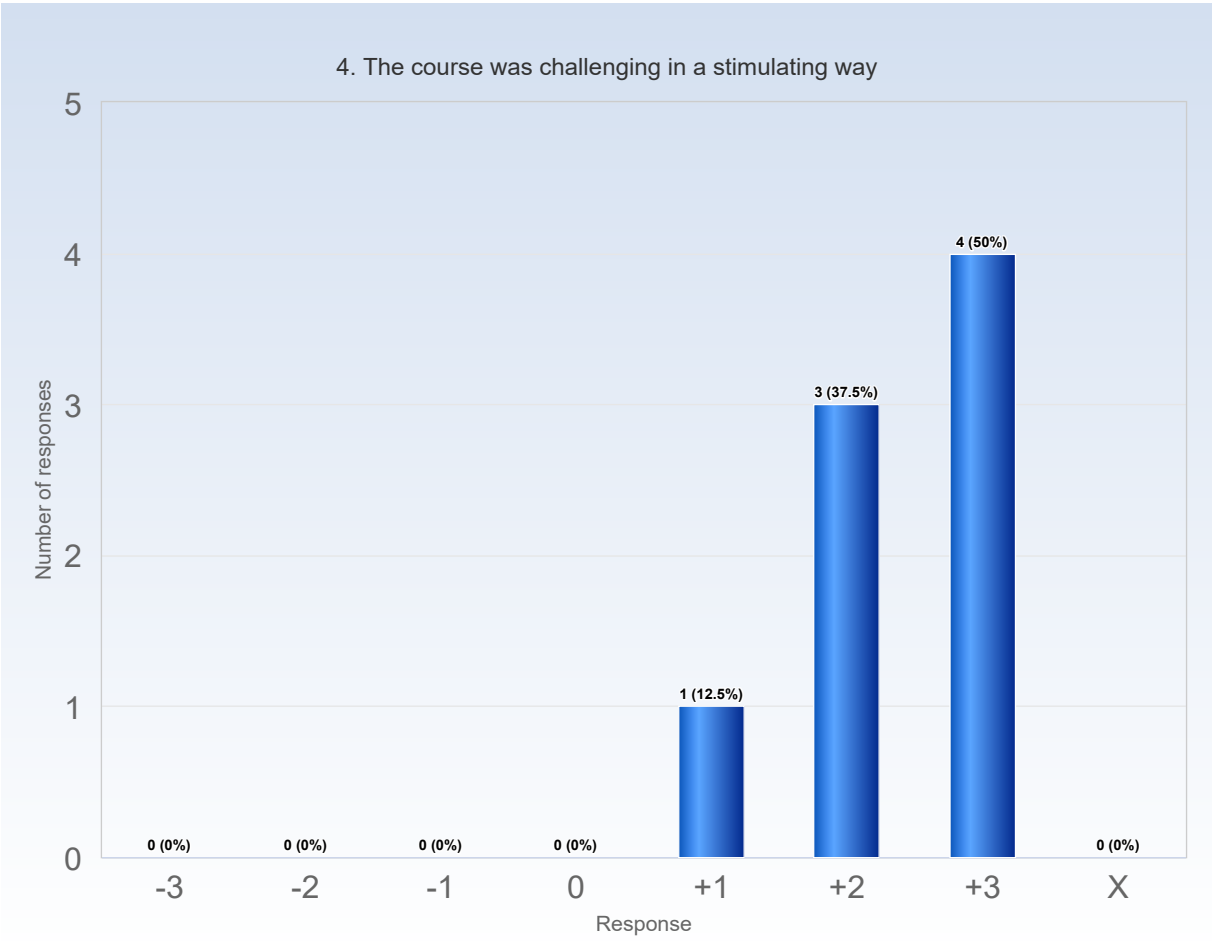


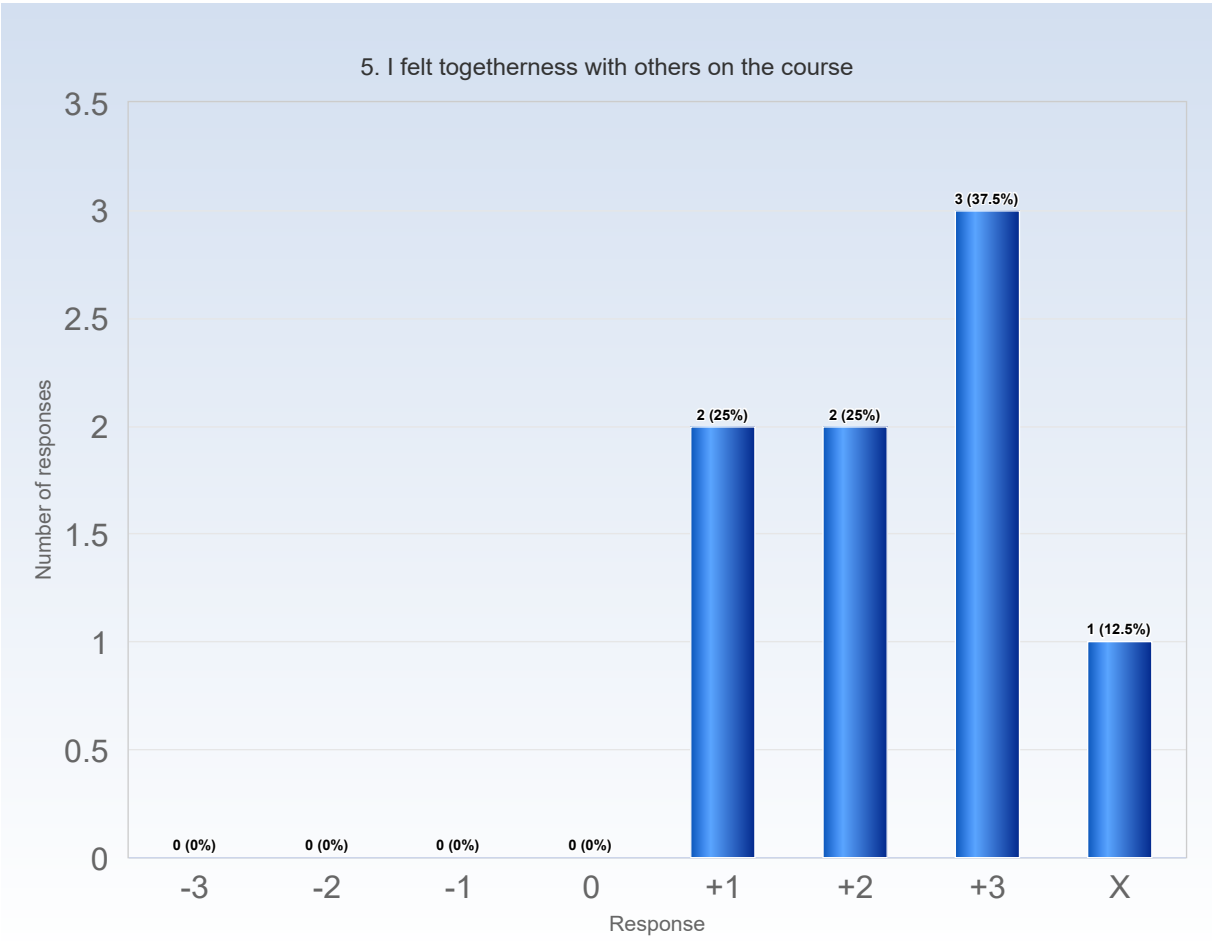
Comments

Comments (My response was: +3)
The project was great, had a great time solving them as a group



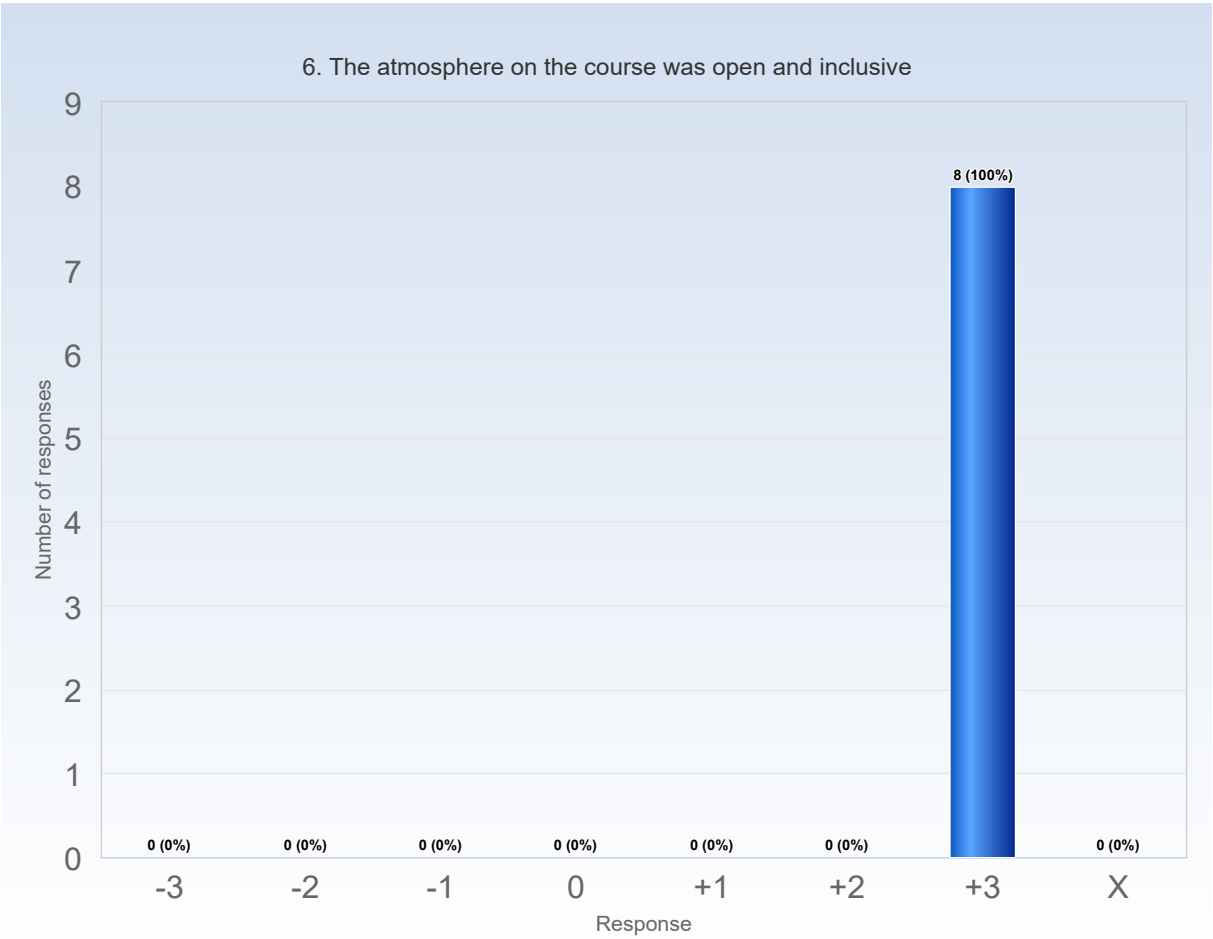

3. I was able to learn by trying out my own ideas
Number of responses
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
2 (25%)
1 (12.5%)
0 (0%)
5 (62.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

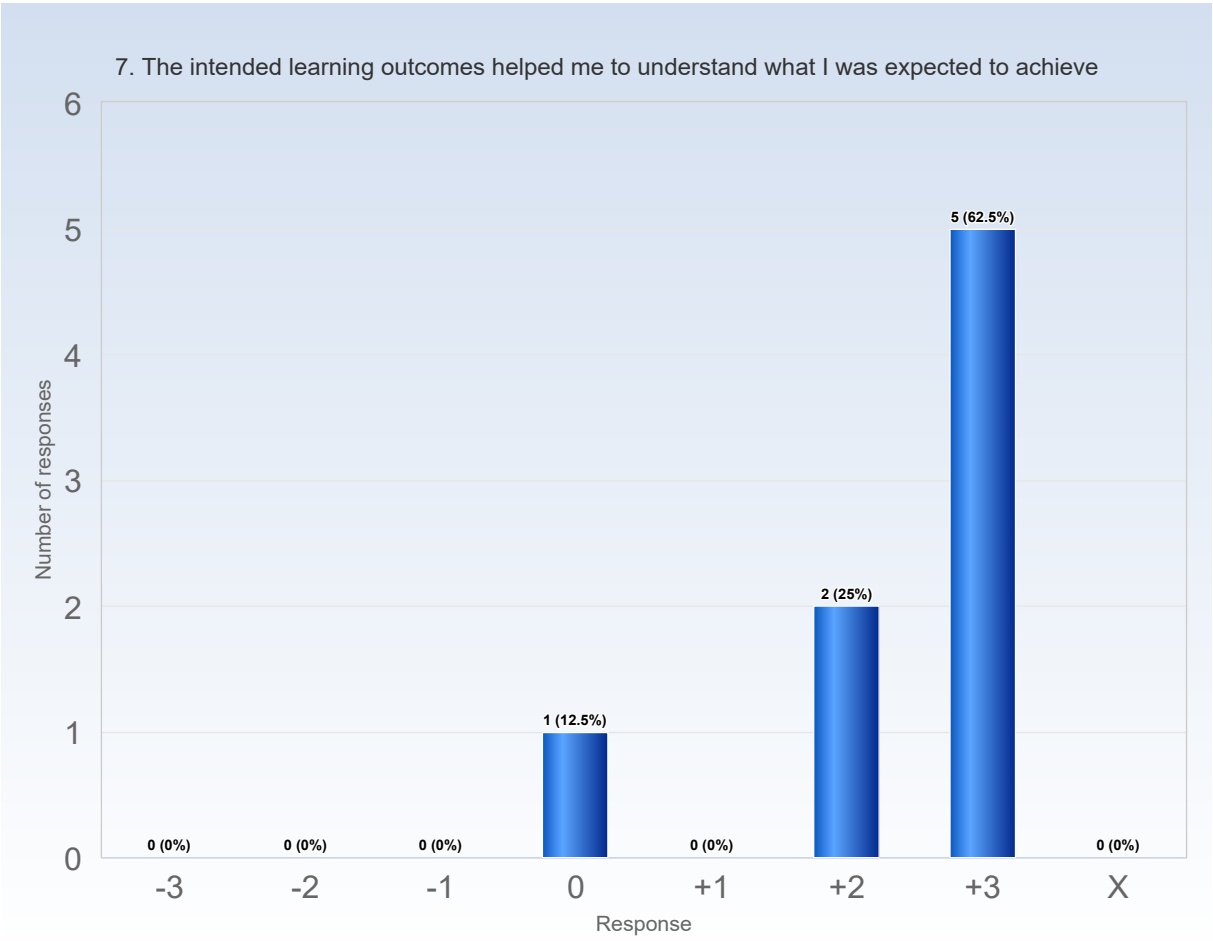

4. The course was challenging in a stimulating way
Number of responses
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
3 (37.5%)
4 (50%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

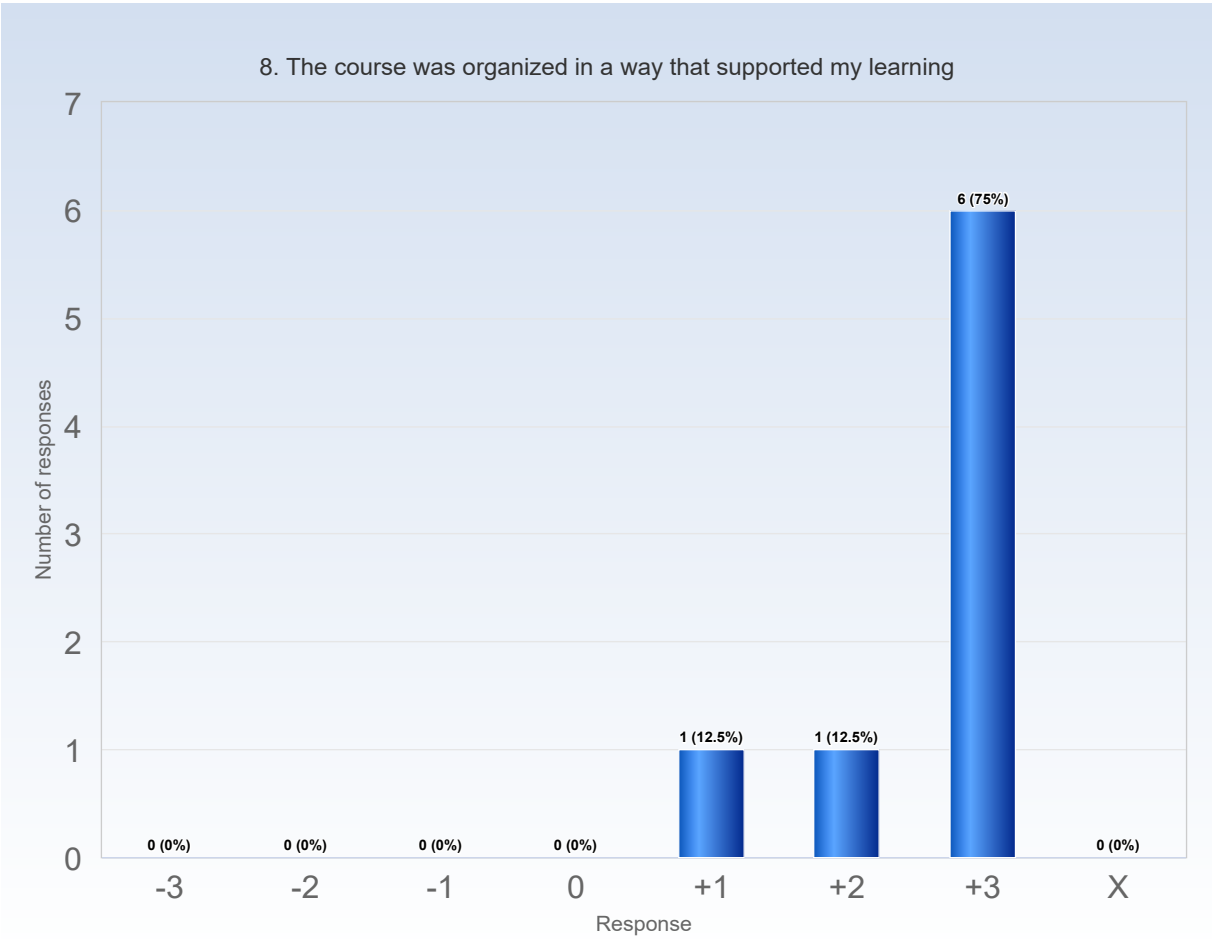


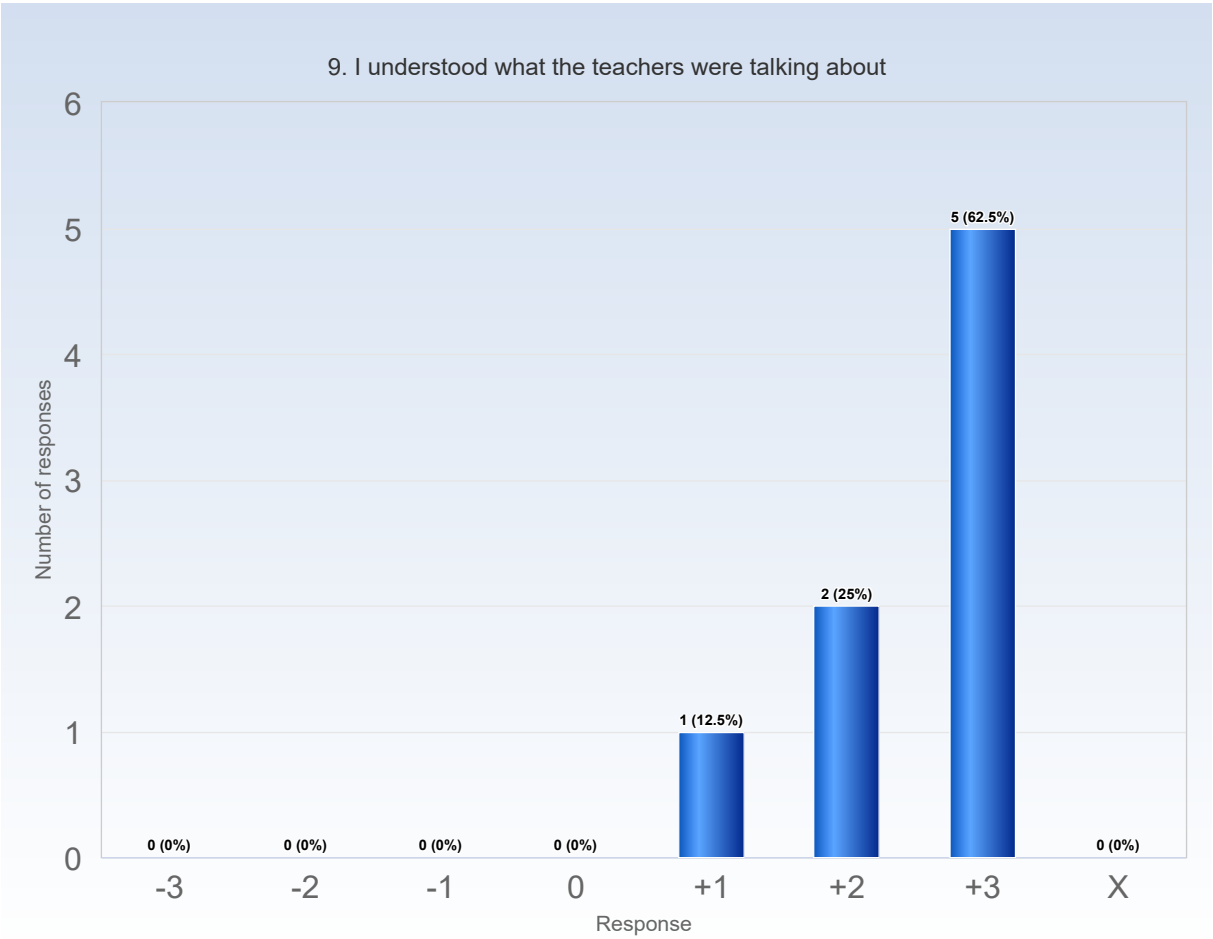
Comments

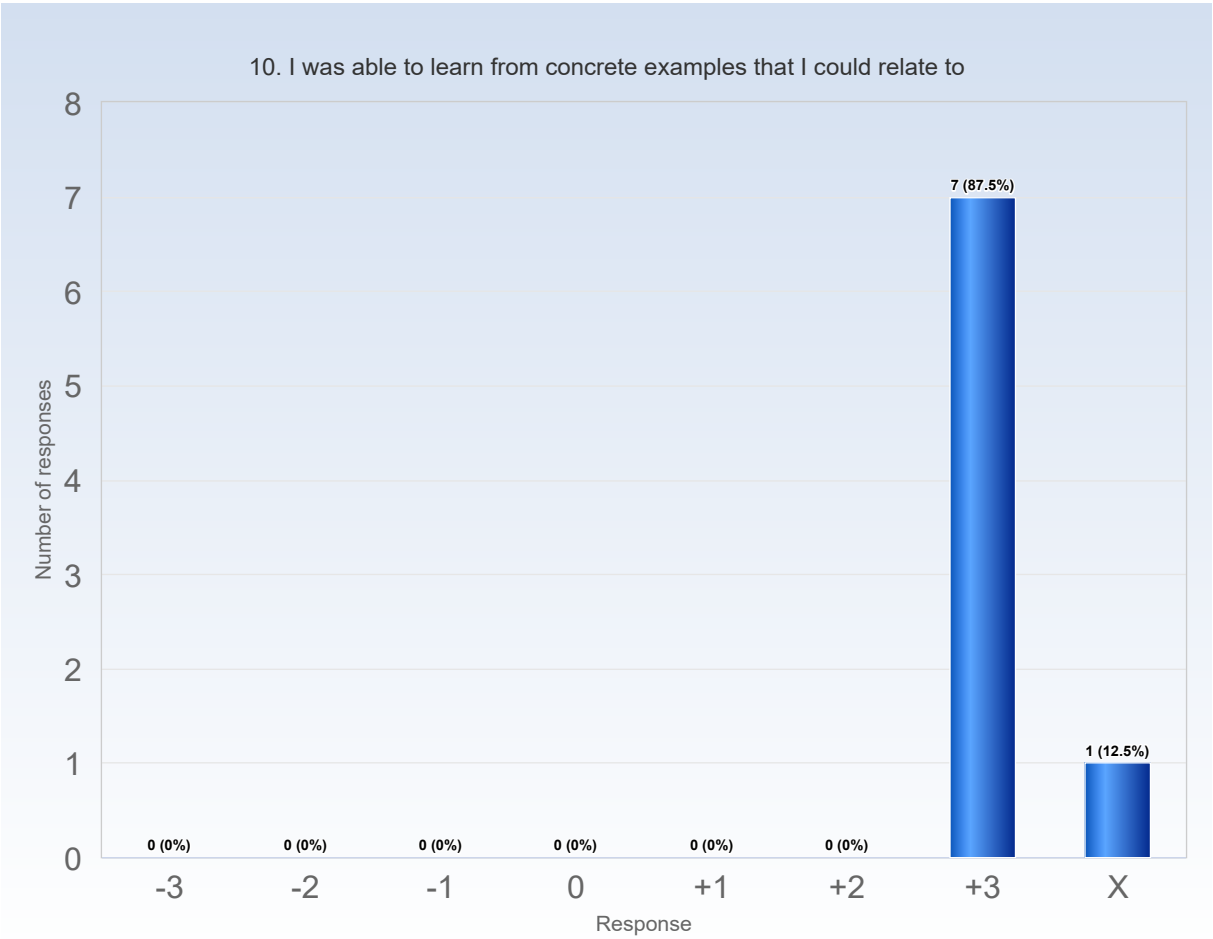
Comments (My response was: +2)
I often think it's hard to feel togetherness with others on the master's courses, but having random groups for the project really helped!

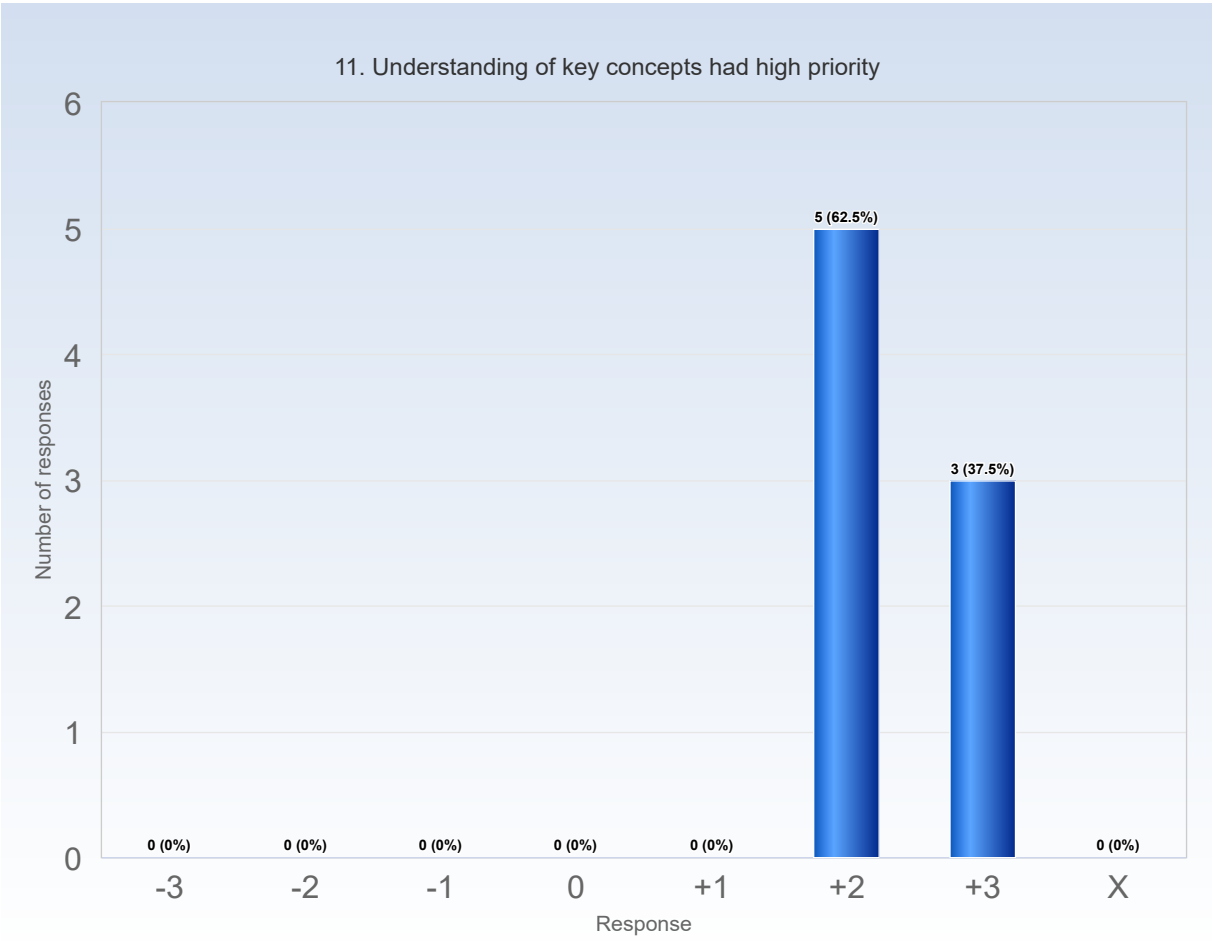

6. The atmosphere on the course was open and inclusive
Number of responses
9
8
7
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
8 (100%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

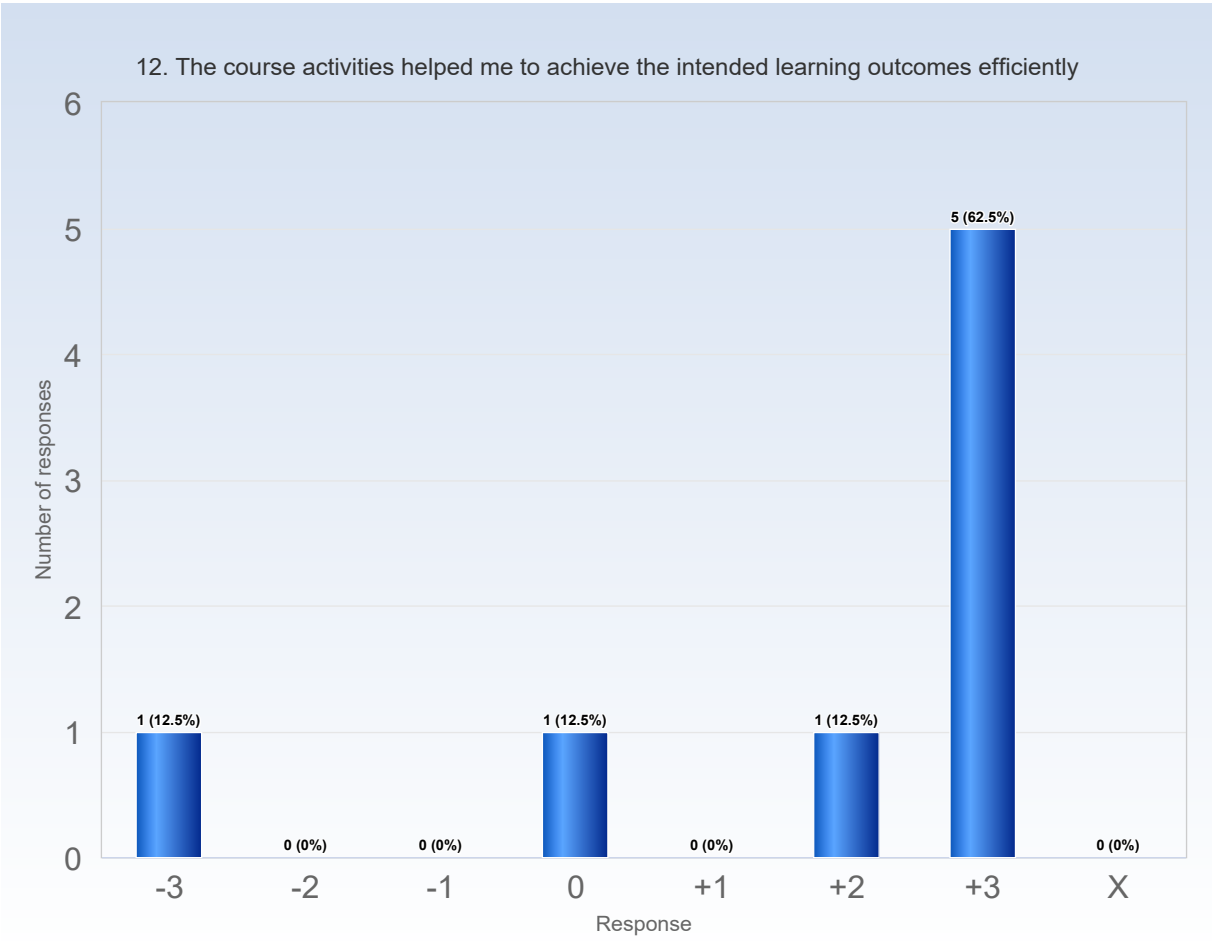

7. The intended learning outcomes helped me to understand what I was expected to achieve
Number of responses
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
0 (0%)
2 (25%)
5 (62.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


8. The course was organized in a way that supported my learning
Number of responses
7
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
1 (12.5%)
6 (75%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


9. I understood what the teachers were talking about
Number of responses
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
2 (25%)
5 (62.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


10. I was able to learn from concrete examples that I could relate to
Number of responses
8
7
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
7 (87.5%)
1 (12.5%)
-3
-2
-1
0
+1
+2
+3
X
Response

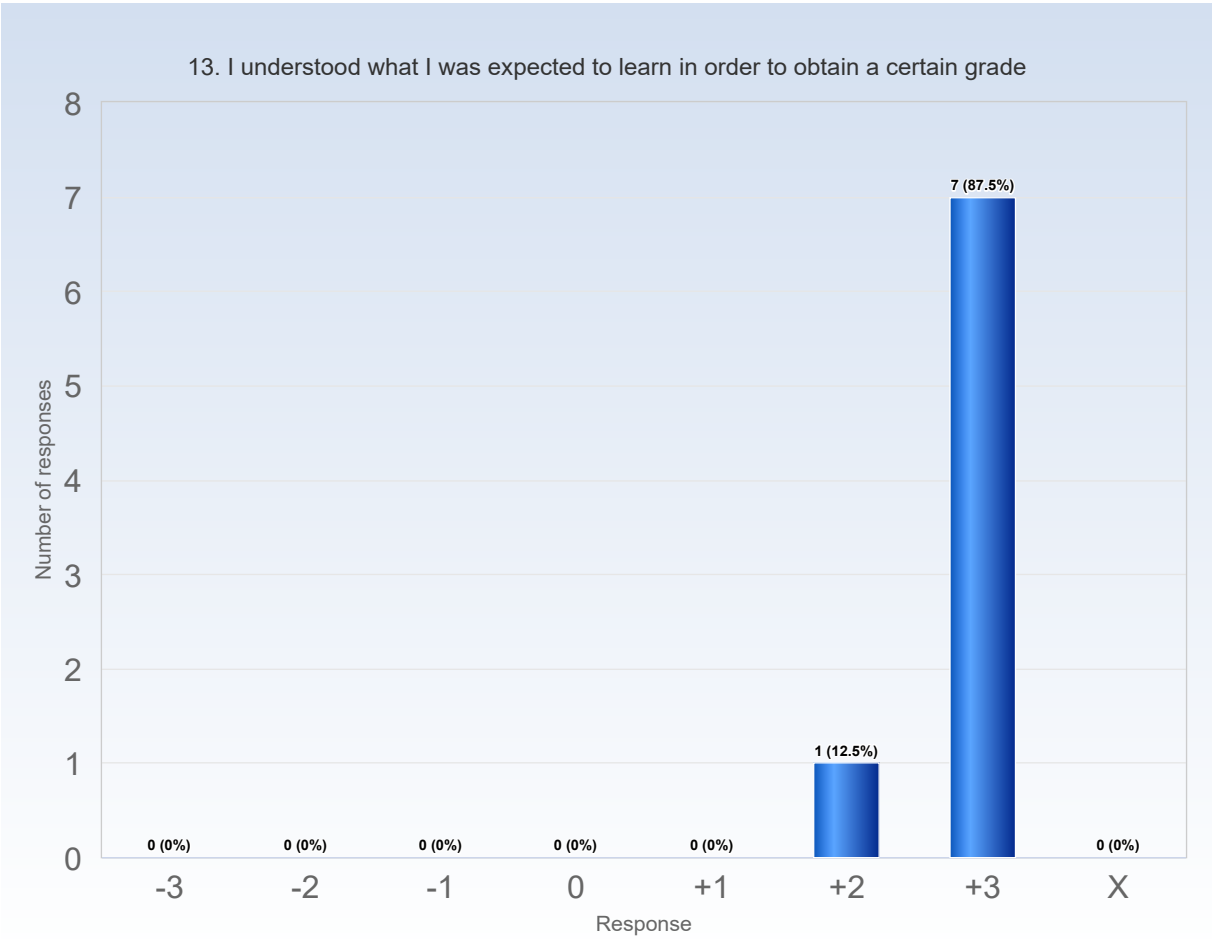

11. Understanding of key concepts had high priority
Number of responses
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
5 (62.5%)
3 (37.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

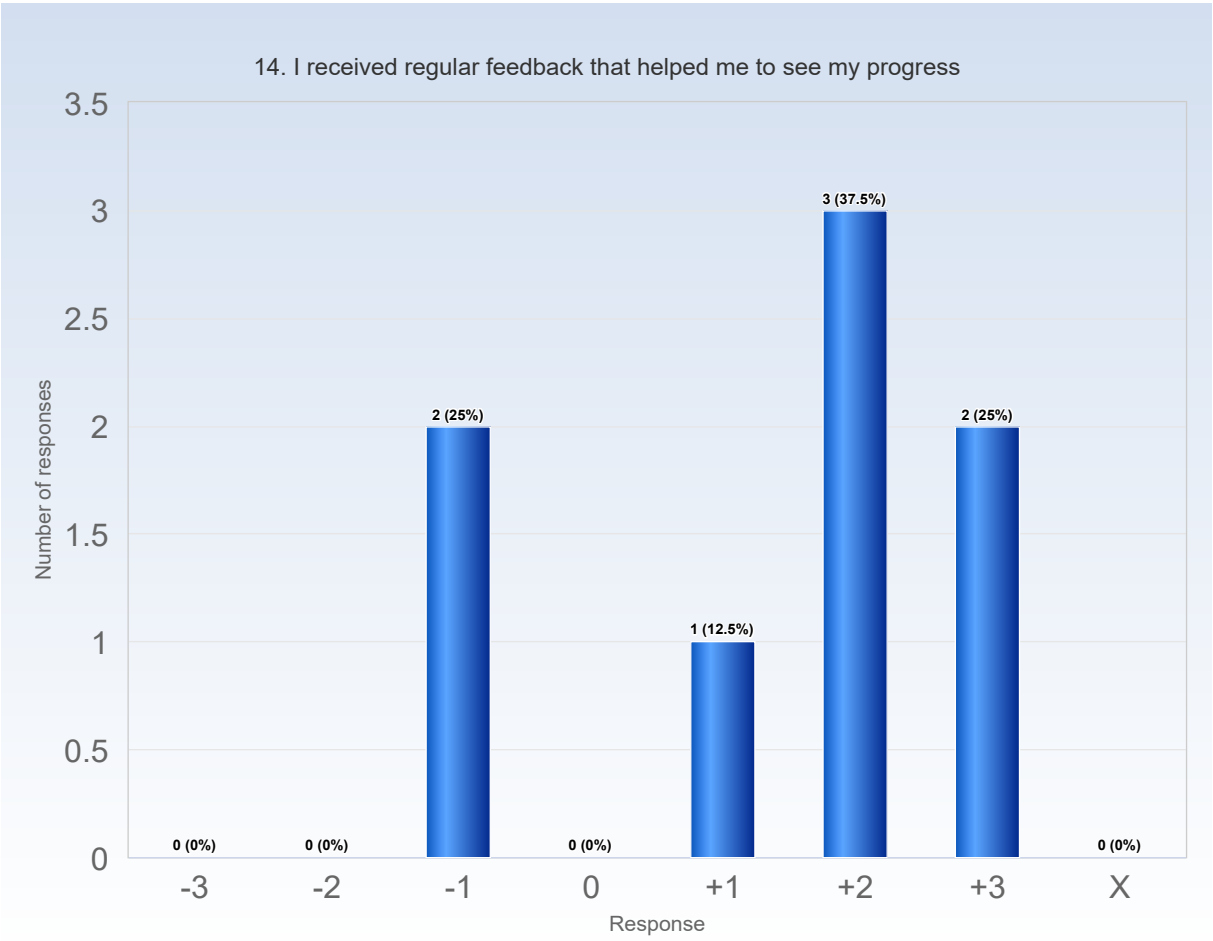


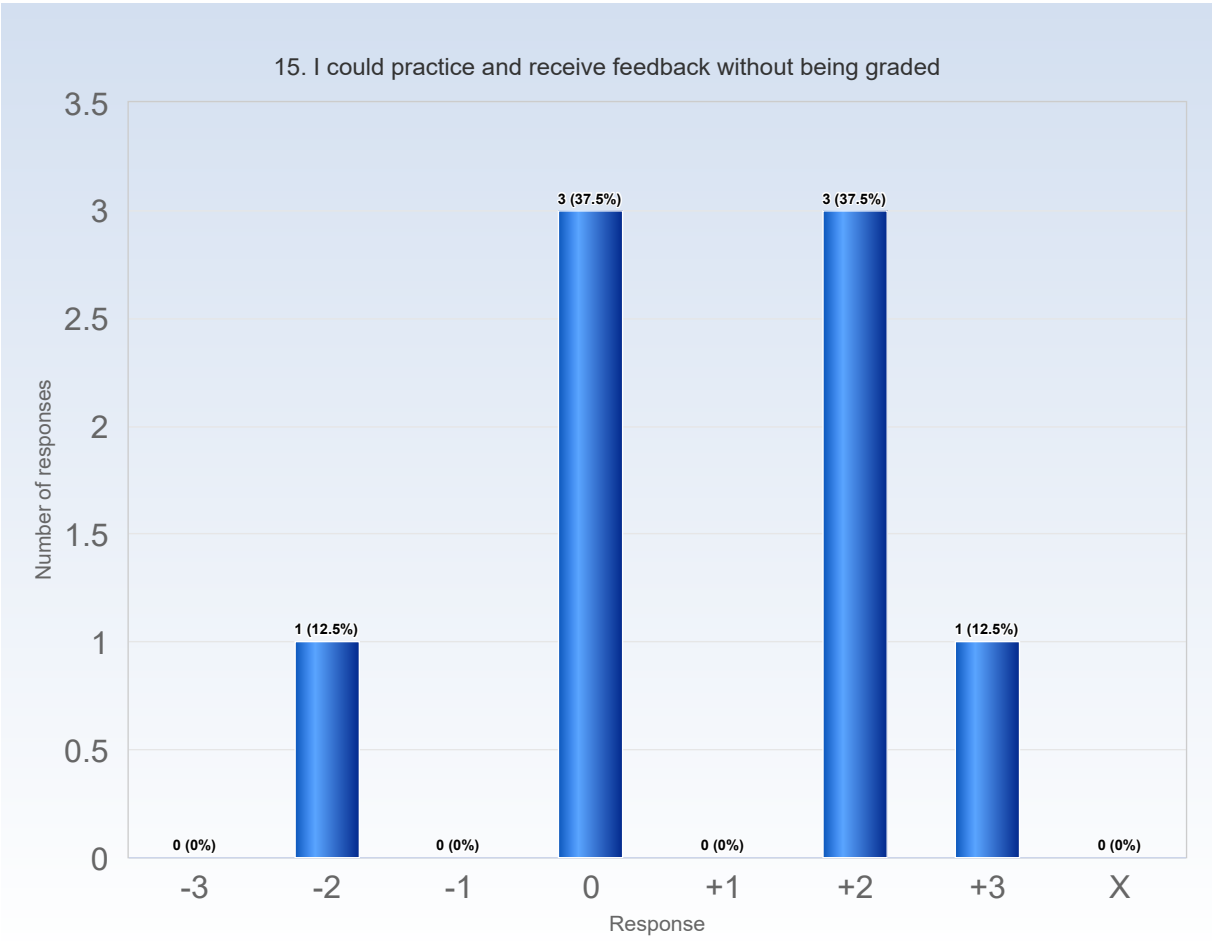
Comments

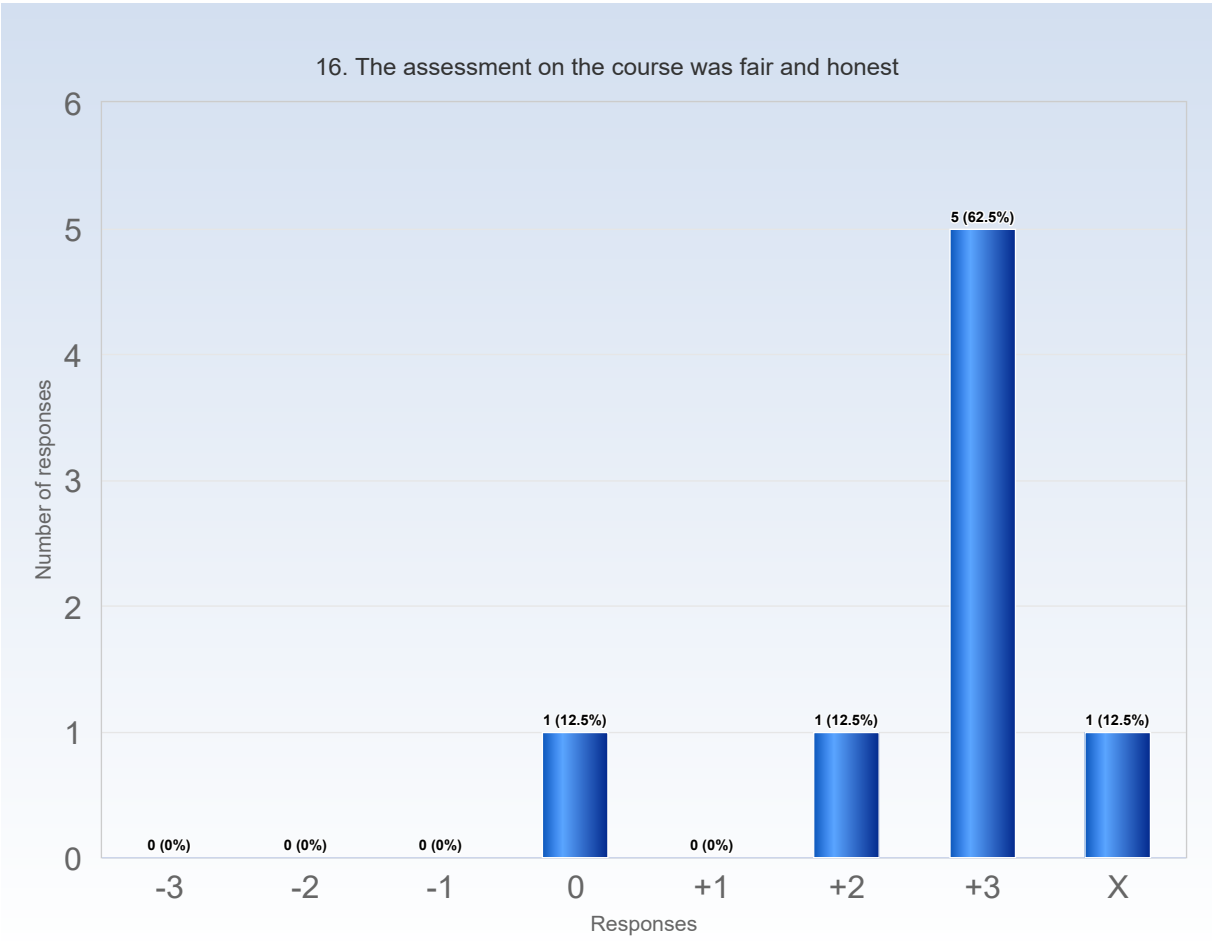
(My response was: -3)

TA needed to be more proactive in explaining


13. I understood what I was expected to learn in order to obtain a certain grade
Number of responses
8
7
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
7 (87.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

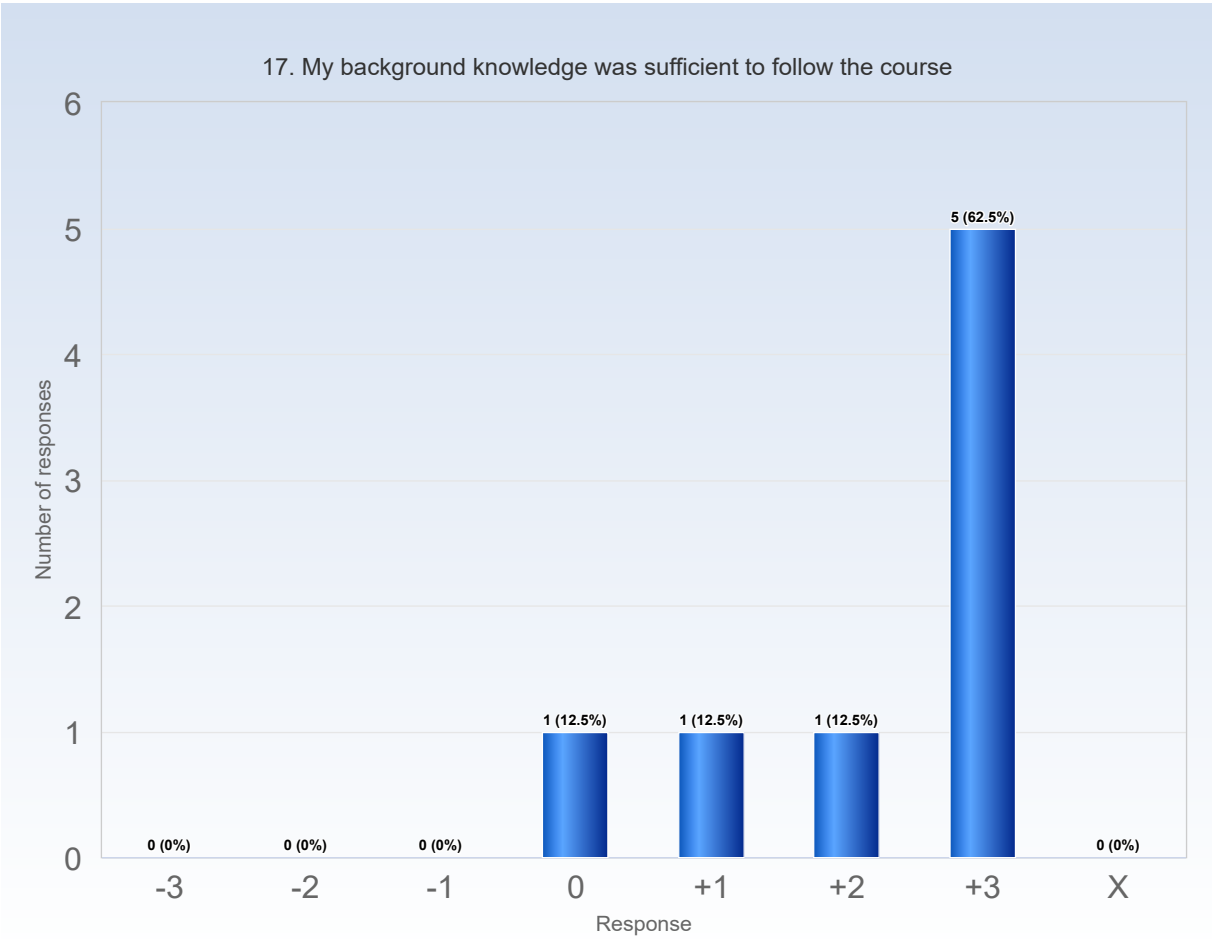

14. I received regular feedback that helped me to see my progress
Number of responses
3.5
3
2.5
2
1.5
1
0.5
0
0 (0%)
0 (0%)
2 (25%)
0 (0%)
1 (12.5%)
3 (37.5%)
2 (25%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

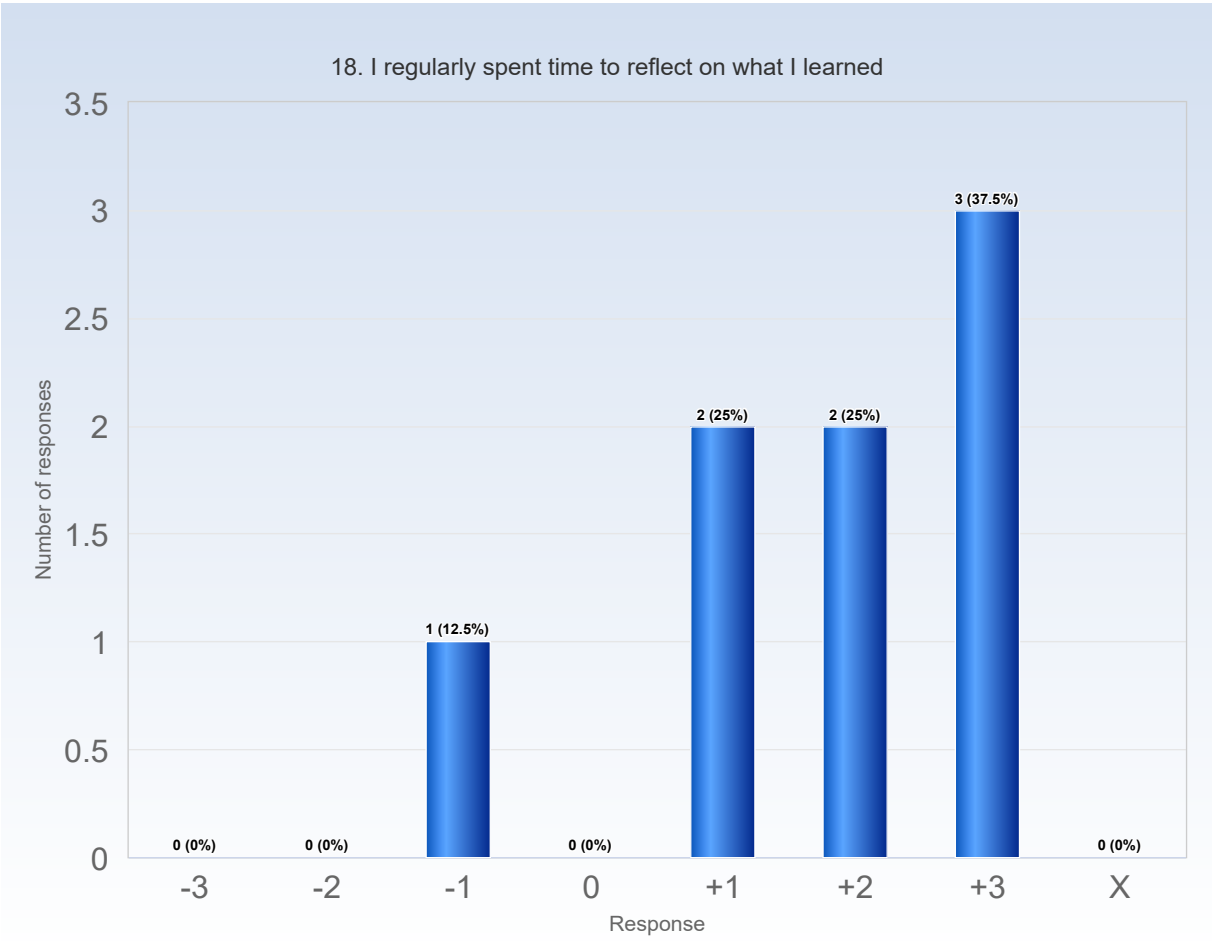

15. I could practice and receive feedback without being graded
3.5
3
2.5
2
1.5
1
0.5
0
Number of responses
0 (0%)
1 (12.5%)
0 (0%)
3 (37.5%)
0 (0%)
3 (37.5%)
1 (12.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response

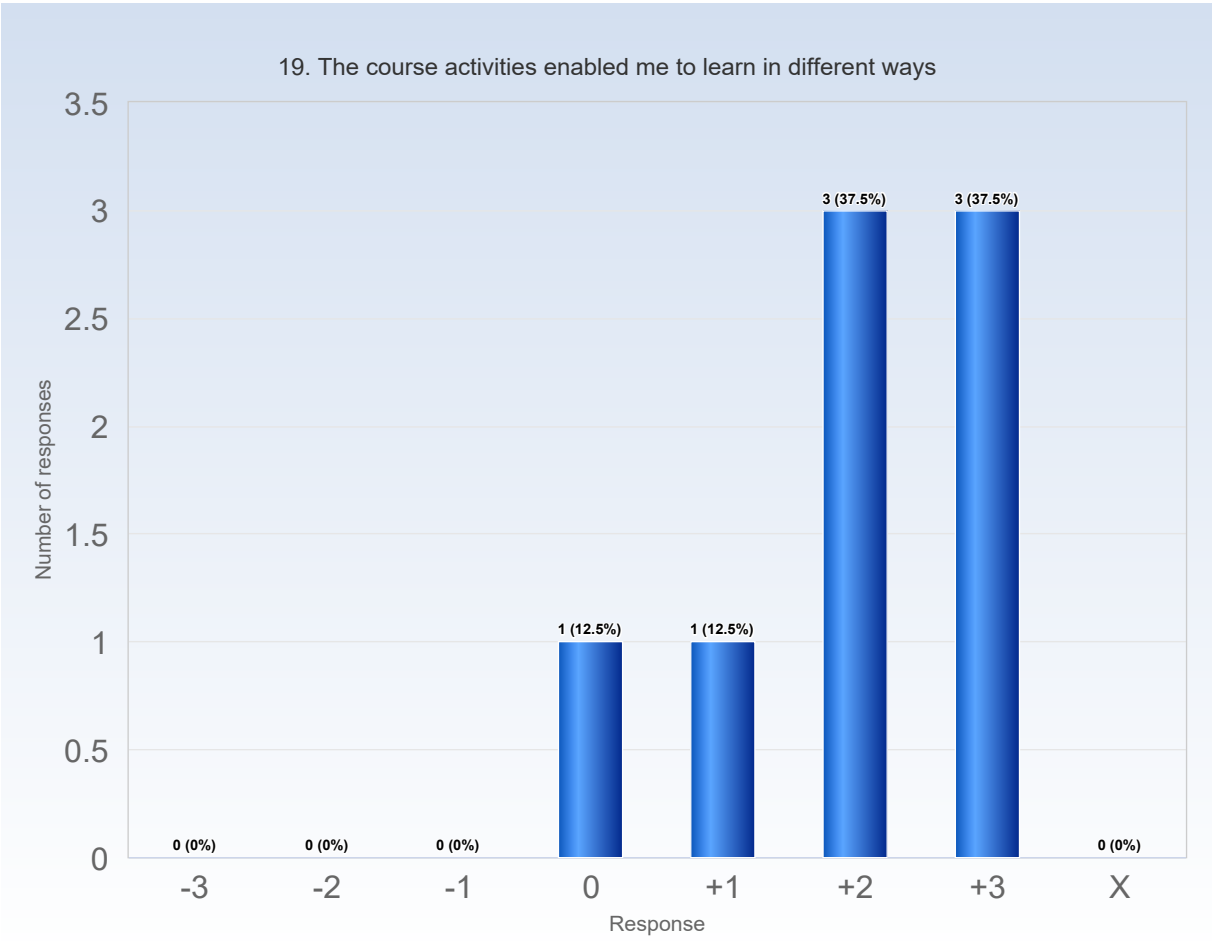


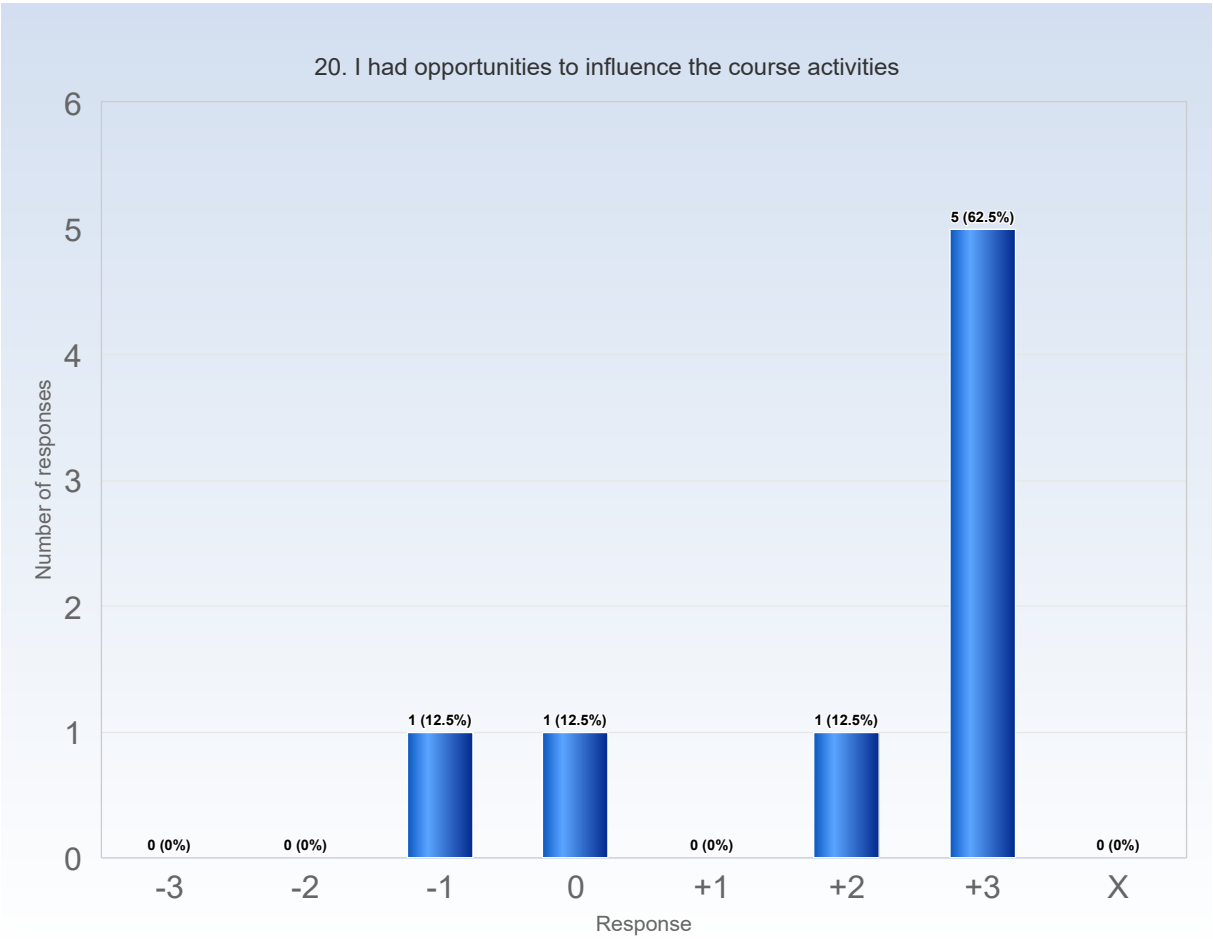
Comments

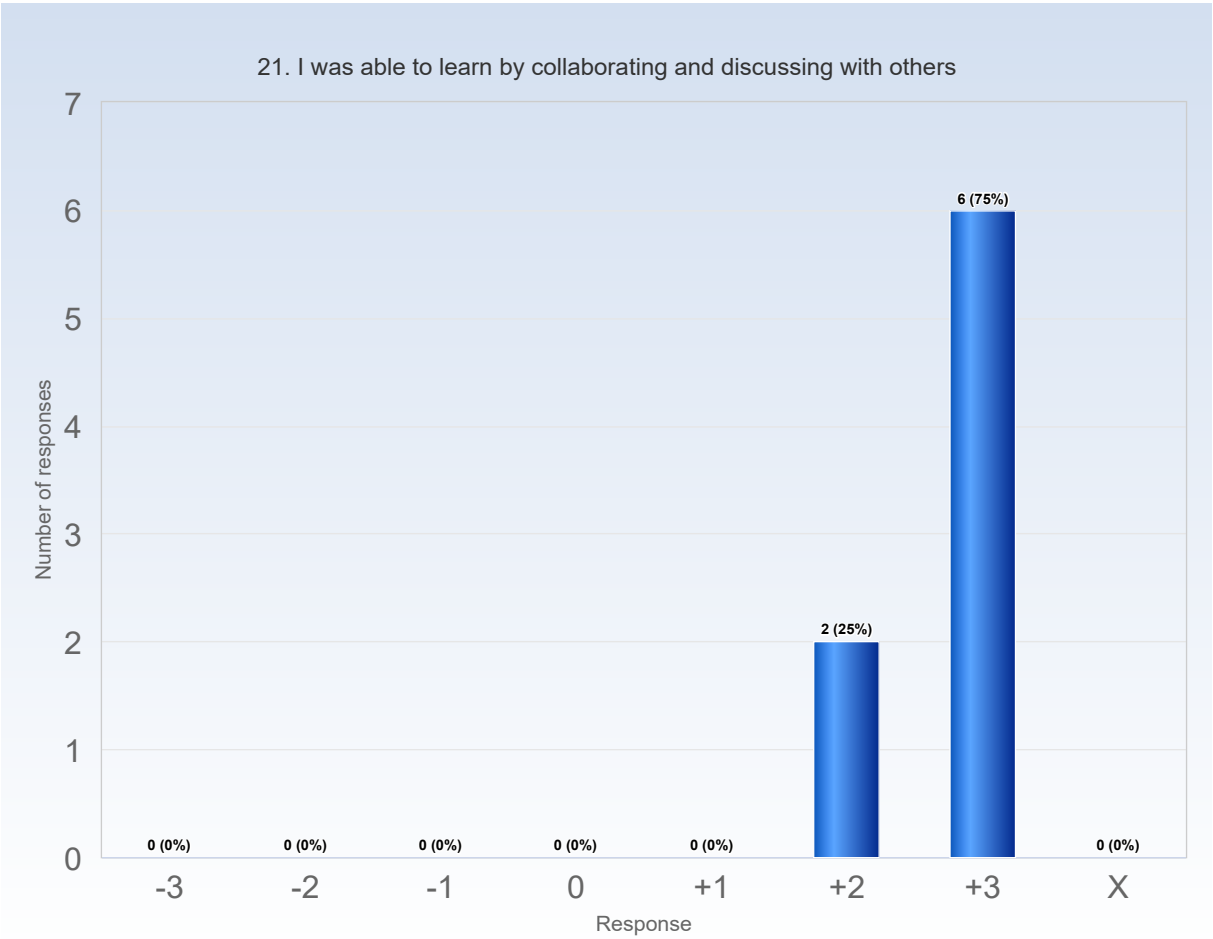
Comments (My response was: 0)
Havnt recieved the exam results yet, so that is hard to know

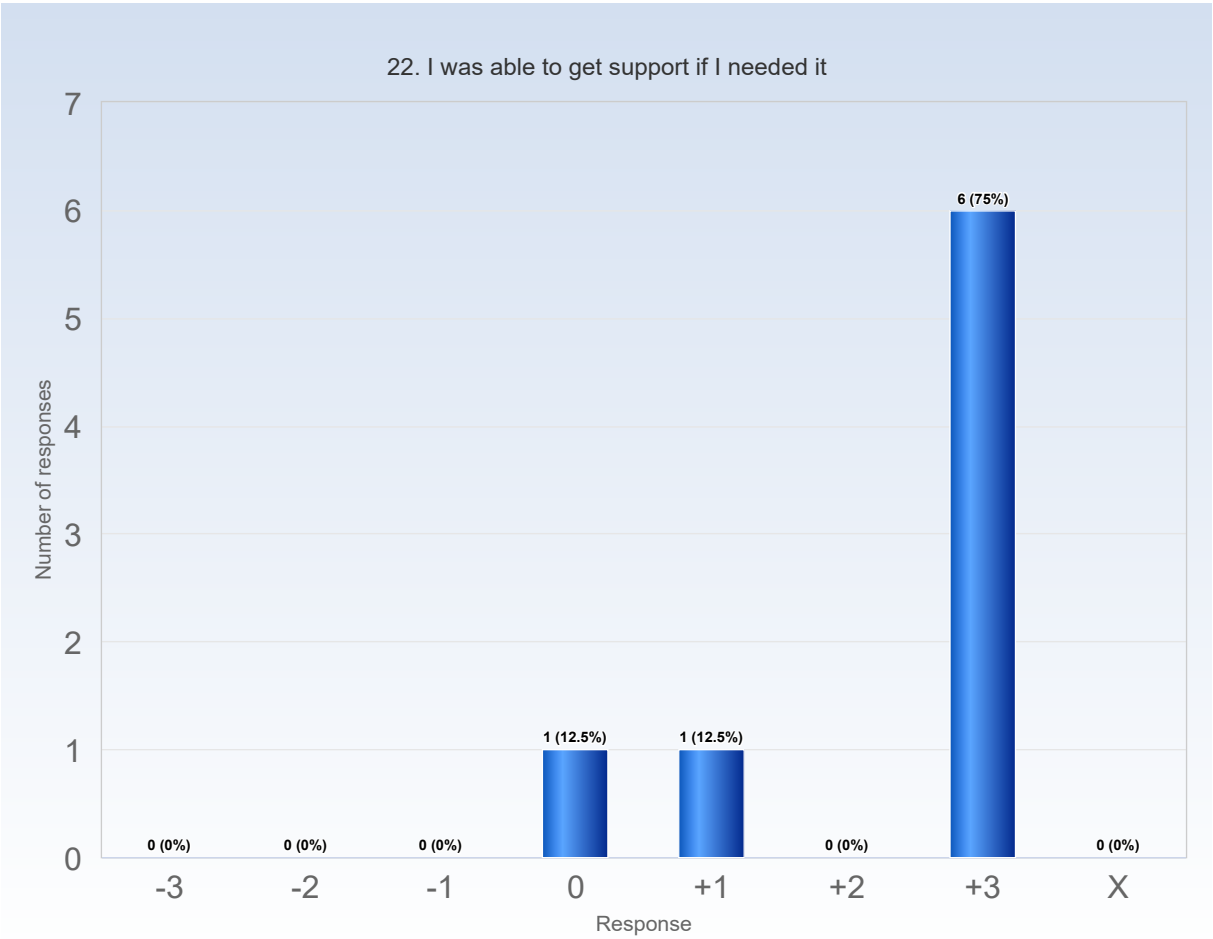

17. My background knowledge was sufficient to follow the course
Number of responses
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
1 (12.5%)
1 (12.5%)
5 (62.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


18. I regularly spent time to reflect on what I learned
Number of responses
3.5
3
2.5
2
1.5
1
0.5
0
0 (0%)
0 (0%)
1 (12.5%)
0 (0%)
2 (25%)
2 (25%)
3 (37.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


19. The course activities enabled me to learn in different ways
Number of responses
3.5
3
2.5
2
1.5
1
0.5
0
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
1 (12.5%)
3 (37.5%)
3 (37.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


20. I had opportunities to influence the course activities
Number of responses
6
5
4
3
2
1
0
0 (0%)
0 (0%)
1 (12.5%)
1 (12.5%)
0 (0%)
1 (12.5%)
5 (62.5%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


21. I was able to learn by collaborating and discussing with others
Number of responses
7
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
2 (25%)
6 (75%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response


22. I was able to get support if I needed it
Number of responses
7
6
5
4
3
2
1
0
0 (0%)
0 (0%)
0 (0%)
1 (12.5%)
1 (12.5%)
0 (0%)
6 (75%)
0 (0%)
-3
-2
-1
0
+1
+2
+3
X
Response