

Kursanalys

Kurstitel: System- och livscykelanalys	
Kurskod: BB2570	Högskolepoäng: 7,5
Kursen ingår i programmet: Master i Bioteknologi	
Termin: HT2019	Läsperiod: II
Kursansvarig: Ines Ezcurra	Examinator: Ines Ezcurra
Antal registrerade studenter: 18	Antal godkända vid sista kursdatum: 15
Svarsfrekvens kursvärderingsenkät (%): 29% (5/17, en registrerad student ej aktiv)	

1. Beskrivning av genomförda förändringar till detta kurstillfälle

BB2570 är en helt ny kurs, som startade 2018 och gavs under tillfället för andra gången. Kursen är därför under utveckling. Kursen drivs av en kursansvarig och ett team av externa lärare från ABE skolan plus några lärare från CBH skolan (BIO ämnet). Under 2018 gjordes en kursenkät av LEQ typ som analyserades av alla lärare tillsammans under ett möte. Det beslutades att kursens Projekt skulle presenteras och delas ut till studentgrupper redan under kursens första dag, och att lärarna skulle knyta till dessa projekt under sina föreläsningar, te x genom övningar och/eller diskussioner. Detta beslutades på några synpunkter i LEQ enkäten.

2. Sammanfattning av studenternas kursvärderingar

(Baserad på studenternas kvantitativa svar på kursvärderingen LEQ och synpunkter ur fritextsvar beskriv studenternas upplevelse av måluppfyllelse, kursinnehållet, kursorganisationen, arbetsbelastningen och examinationen. Kvantitativ sammanställning och grafer kan bifogas i bilaga.)

Väldigt få studenter svarade på LEQ enkäten under 2019 så här görs en aggregerad analys av LEQ enkäten för 2018-2019, då svarfrekvensen var högre under 2018 (56%, 10/18 studenter).

Arbetsinsats: statistiken visar att arbetsinsatsen (i tid) under 2019 är något lägre än förväntad (medel 13 h/vecka, förväntad 20 h/vecka). Det är möjligt tentamen efter jullovet gör att studenter pluggar under jullovet vilket minskar arbetsinsatsen under ordinarie kurs tid. I kommentarerna anser samma studenter att arbetsinsatsen är rimlig. Några studenter önskar flera schemalagda lektioner eller aktiviteter.

Genusfrågor: Bra med flera kvinnliga lärare. Samma positiva synpunkt 2018.

Specifika LEQ frågor (obs 12 frågor LEQ, se bilaga 2)

Positiva upplevelser: Intressanta föreläsningar, rimlig nivå av nödvändiga förkunskaper, samarbete och diskussioner, variation på aktiviteter, konkreta exempel i undervisningen.

Negativa upplevelser: Det blev problem med tentamen under 2019, några av frågorna (stor essäfråga) dömdes ganska strikt av ansvarig lärare utan klara kriterier ansåg flera studenter. Detta kan även ha sänkt den samlade helhetsupplevelse av kursen. Kursens lärandemål och aktiviteter upplevdes också som problematiska. Upplevelser av utmaning och stimulering var i genomsnitt nästa neutrala, borde vara högre.

Fria kommentarer

Positiva upplevelser: Intressant och viktig kurs. Projektet lärorikt. Causal loops diagrams.

Negativa upplevelser: 1) LCA programmet lcopt ansågs inte lämplig, och assistenten var inte på plats för att hjälpa utan svarade på mails. Liknande kommentarer under 2018. 2) Tentamen: studenter saknade information om hur ingående man skulle svara på



essäfrågor. Bedömningen kändes orättvis, oklara kriterier. Studenter efterfrågar övningar inför tentamen. 3) En student klagade på att projektens handledande lärare inte svarade på mail.

Förbättringsförslag: 1) Tentamen P/F; Projekt A-F. 2) Använd "riktig" LCA program, inte Icopt. 3) Flera schemalagd aktiviteter. 4) Övningar inför tentamen.

3. Reflektioner kring kursens genomförande och resultat

a. Kursens styrkor: Ämnet

Ämnet – Projektarbete – Grupparbete

b. Kursens svagheter:

Programmet Icopt – Tentamen 2019 – Stimulans och aktiviteter – Alltför många lärare från annan skola, svårt att skapa lärarteam, teamanda & kommunikation

4. Förslag till förändringar för kommande kurstillfälle

- 1) Byta LCA program, till t ex SimaPro.
- 2) Skapa flera schemalagda aktiviteter, t ex övningar och frågor rättade av studenterna själva med peer assessment
- 3) Diskutera examensfrågor med berörda lärare

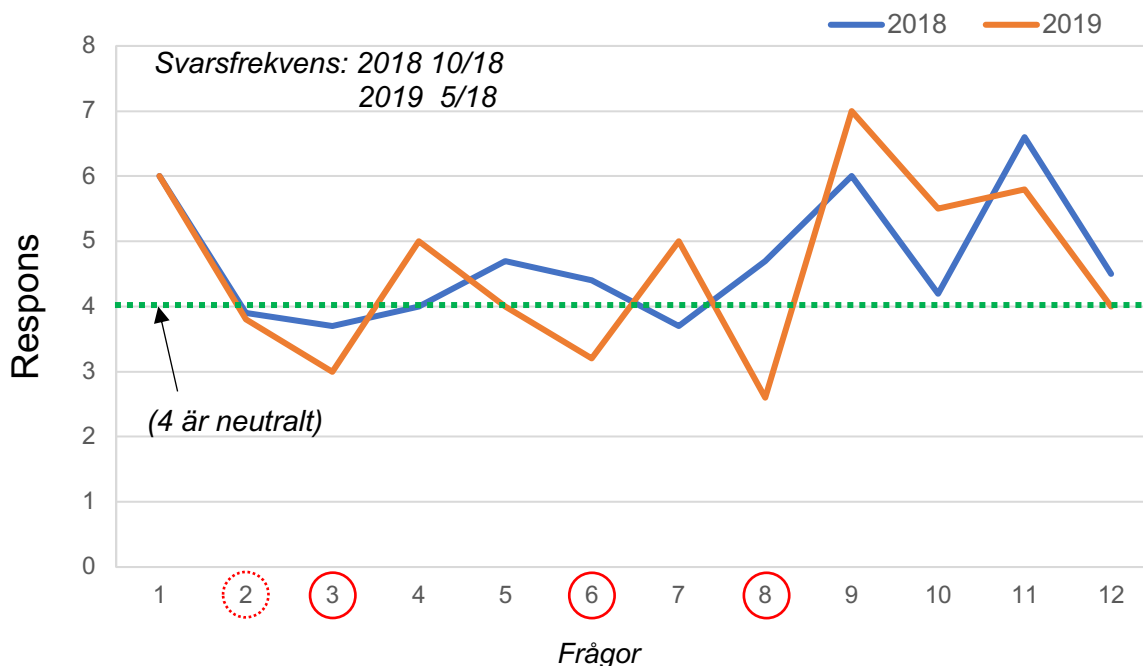
Dessa förslag kommer att diskuteras under möte med alla lärare under vår 2020 (mars eller april). Alla uppkomna problem kommer att diskuteras och åtgärdas.

Kursansvarig går kursen LH233V Lärande för utmaningsdriven utbildning med globala utvecklingsmål under vår 2020 med specifikt projekt att utveckla BB2570.

5. Övriga synpunkter

Bilagor:

1. Aggregerad analys av LEQ enkät för 2018-2019
2. Kursvärdering 2019
3. Kursvärdering 2018

BB2570 - Respons LEQ enkäter 2018-2019


Tabell: Respons på LEQ frågor under 2018 och 2019

LEQ frågor	2018	2019	Δ
1. Jag arbetade med intressanta frågeställningar	6	6	0
2. Kursen kändes utmanande på ett stimulerande sätt	3,9	3,8	-0,1
3. Lärandemålen hjälpte mig att förstå vad jag förväntades kunna efter kursen	3,7	3	-0,7
4. Jag kunde lära mig av konkreta exempel som jag kunde relatera till	4	5	1
5. Förståelse av centrala begrepp hade hög prioritet	4,7	4	-0,7
6. Kursens aktiviteter hjälpte mig att nå lärandemålen på ett effektivt sätt	4,4	3,2	-1,2
7. Jag kunde öva och få feedback utan att någon betygsättning gjordes	3,7	5	1,3
8. Kursens examination kändes ärlig och rättvis	4,7	2,6	-2,1
9. Mina tidigare kunskaper var tillräckliga för att följa kursen	6	7	1
10. Kursens aktiviteter gjorde det möjligt för mig att lära på olika sätt	4,2	5,5	1,3
11. Jag kunde lära mig genom att samarbeta och diskutera med andra	6,6	5,8	-0,8
12. Jag kunde få stöd om jag behövde det	4,5	4	-0,5
Medelrespons	4,6	4,7	

 Styrkor ■

 Svagheter ■

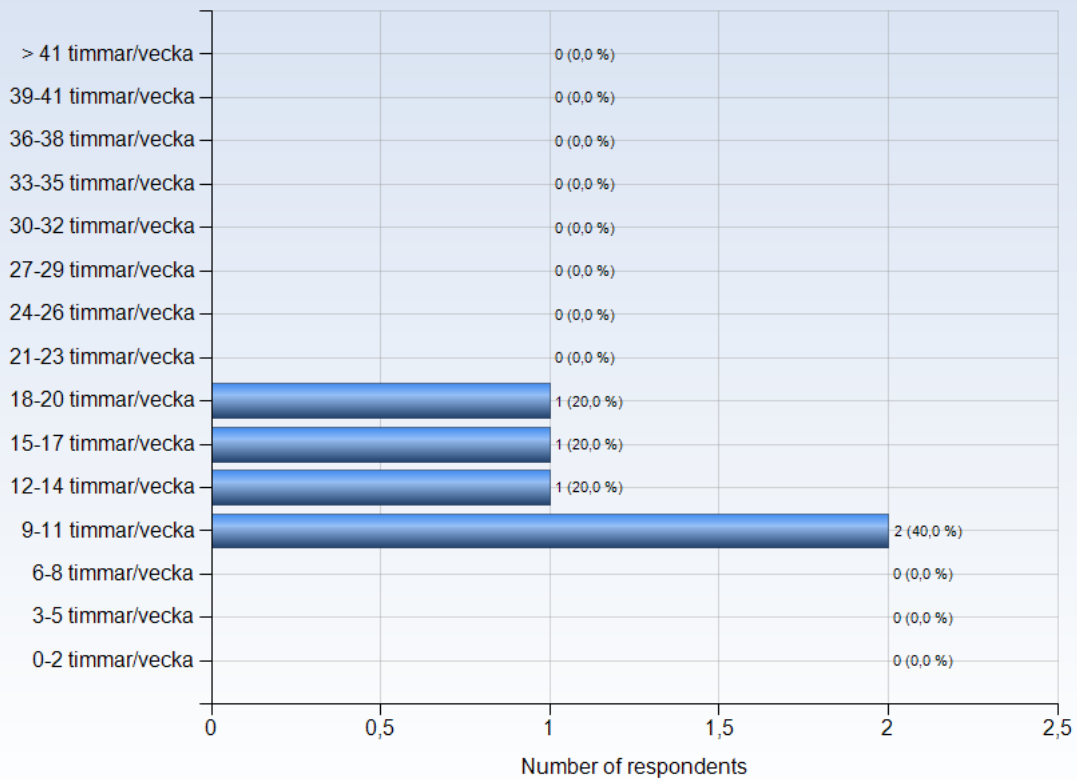


BB2570 - 2020-02-04

Antal respondenter: 18
Antal svar: 5
Svarsfrekvens: 27,78 %

ESTIMATED WORKLOAD

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



Comments

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

The workload was well distributed. Plenty of time to do the project.

Comments (I worked: 12-14 timmar/vecka)

I usually spend 20 hrs/week in 7,5 courses, but we did not go through enough material for me to be able to do that. Most of the time was spent on the project and making loopt work, instead of learning new concepts.

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

I thought the amount of time needed for the course was reasonable.



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:

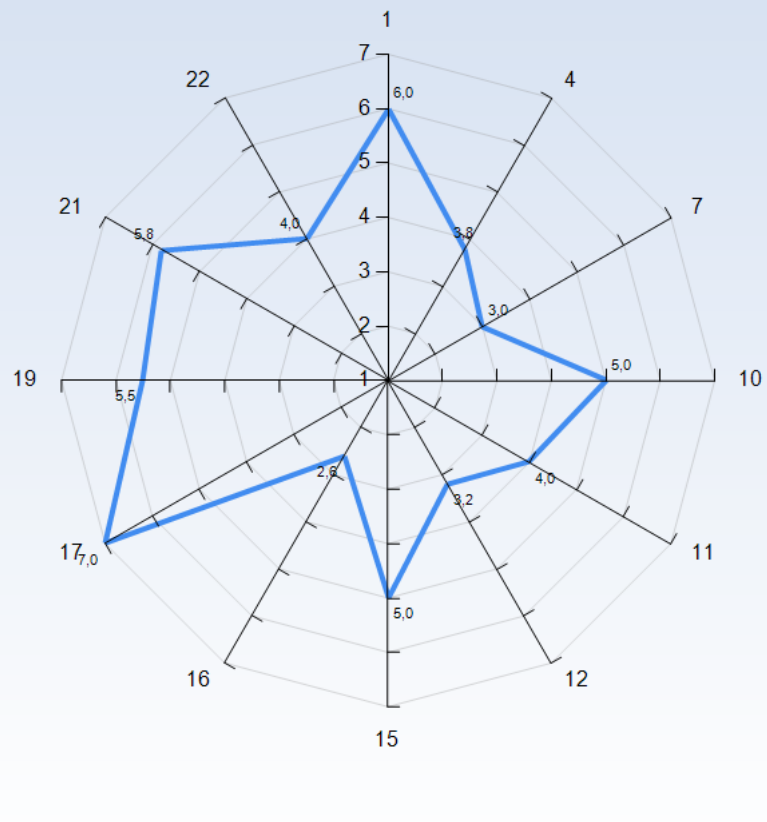
1 = No, I strongly disagree with the statement

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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.

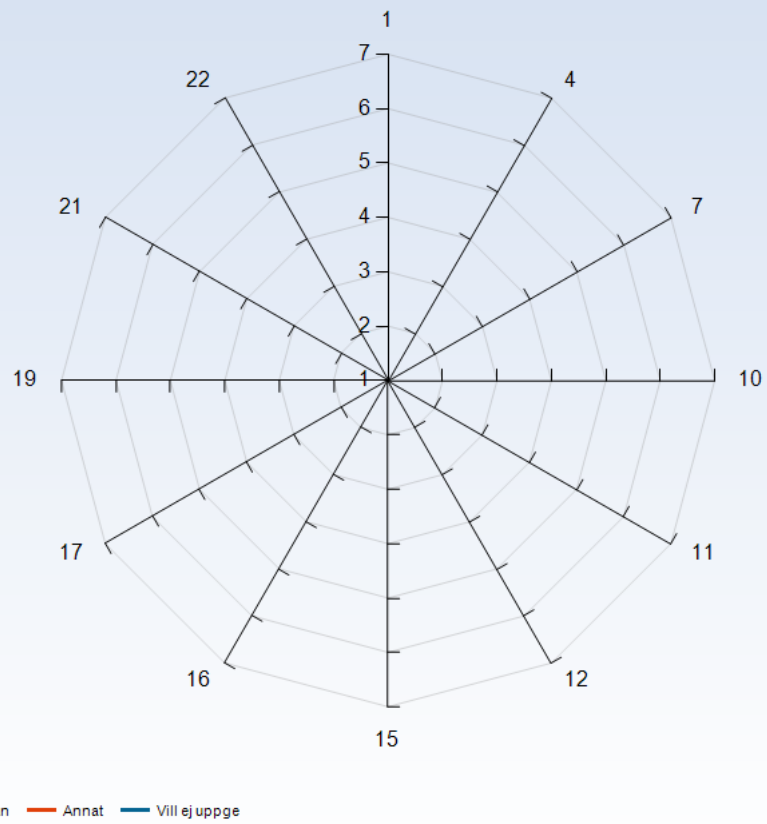
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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

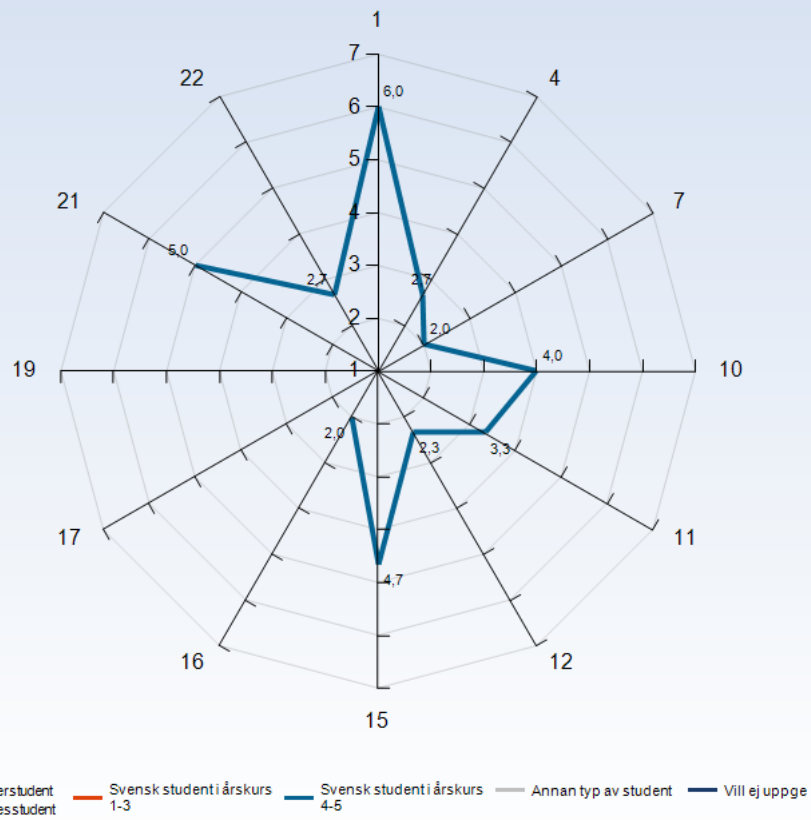


Comments

Comments (I am: Kvinna)

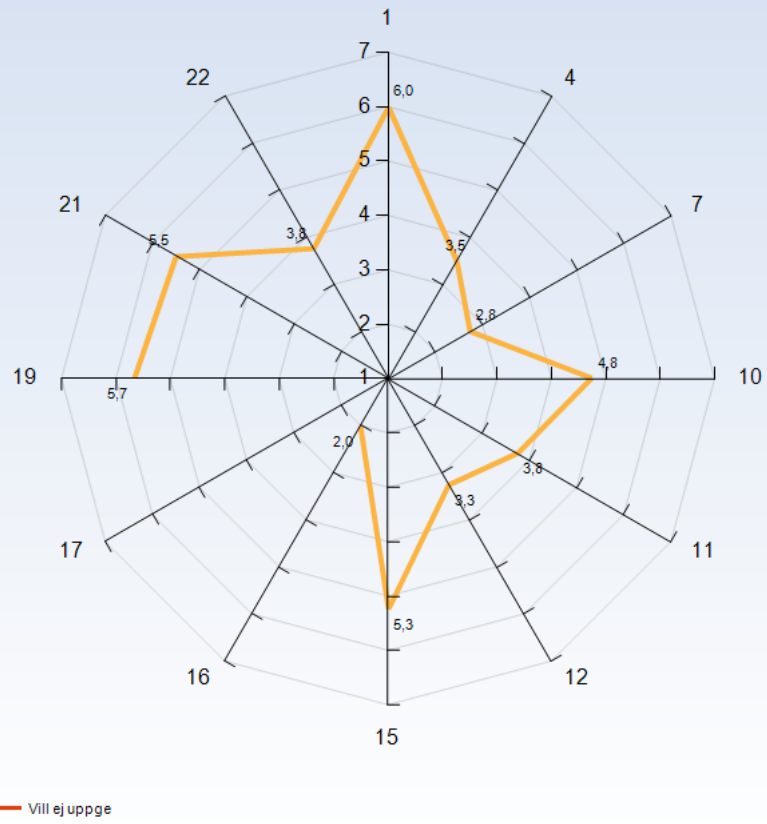
No feedback - good in terms of this aspect!

Average response to LEQ statements - per type of student



Comments

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: 9-11 timmar/vecka)

The project was really good to understand how to perform an LCA and understand the limitations of that analysis.

I thought the contents of the course were very interesting, and the project was a good opportunity to deepen the understanding of the concepts we learned. It was interesting to have a seminar on the CLDs and to have different lecturers in general.

What was the best aspect of the course? (I worked: 12-14 timmar/vecka)

The concept of LCA is interesting and important for our future.

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

The project. And the actual lectures on LCA, those were the parts where I actually learnt something.

What was the best aspect of the course? (I worked: 18-20 timmar/vecka)

I liked the idea of learning how to do an LCA. Quite disappointed that we did not learn the real thing and the real programs.

What would you suggest to improve?

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

The lectures were interesting, but I feel that more details could be added to the slides to make them more clear.

One thing that should really be improved is the handling of LCOpt! Using it for the project is very very different than using it for a cup of tea! We lacked a lot of information about the programme and added to ask James a lot of simple things that could be in a pdf file or explained during an exercise session.

Sometimes the lecturers were not very aware of what we had done before and there was some repetition resulting from this. The introduction to LCOpt was not quite thorough enough to be able to perform a more complex analysis with your own project, without the instructor being present to help only by email. Maybe there could have been one more computer lab, or just having more sessions where an instructor was available. I think the information about the exams could have been a little clearer from the start.

What would you suggest to improve? (I worked: 12-14 timmar/vecka)

The lectures did not have enough content. The lectures with Anna Björklund had good content, but the other lectures did not teach me much. Furthermore, there was a lot of repetition as lecturers repeated what other lecturers had previously said. To sum up, I feel like I have not been given enough material for a 7,5 hp course.

The project was difficult to conduct as the program LCOpt did not function properly. Continuously, it was hard to get help as the computer assistant was only available through mail. The "project mentor" did not seem to be very interested in the project, as it took very long to receive answers and the answers were inadequate. Finally, I do not feel that the project provided me with knowledge as the project itself was too simplified.

The exam felt unfair as I feel that it differed from the content presented during lectures. In addition, during the exam it was sometimes hard to understand what was asked for in the questions, especially about how detailed the answer should be. This becomes clear as students who have discussed exam questions together have received different grades, even though having the same understanding of the course.

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

Communication with "guest lecturers" on their topic, because it was very hard to understand what was important or not.

Also, the exam questions were very open, but then in the assessment points were lost for not knowing to use specific terminology that wasn't clear was being sought after at all, or were needed to get full marks.

Can you PLEASE use the actual program for LCAs and not LCOpt. The other LCA course uses it, so I know KTH has access to it. LCOpt just wasn't suited for our projects, it's way too simple.

Maybe just have a pass or fail exam, but grade the projects, and make the projects a larger part of the course.

What would you suggest to improve? (I worked: 18-20 timmar/vecka)

I must say that almost everything needs to be improved. During the project, it is important to have a teacher there who can support the students in their work. Also, during the lectures, it should be clearly stated what is exam material and what is just "fun-facts". Furthermore, it would be good if the students were given the possibility to test their knowledge through exercise or something similar. By this, it is easier to know what is expected knowledge for the course. As it is today, the first indication is given at the exam which seems to be too late in my opinion.



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)

Do not hesitate to ask questions during the project, especially for the programme.

Start early with the project, it will facilitate your own learning of the concepts but also be useful to achieve the results you want from the project.

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

Give the project your all, it's what you'll learn from.

What advice would you like to give to future participants? (I worked: 18-20 timmar/vecka)

Make sure to ask for extra material so that you can learn the key concepts on your own. If there is no scheduled exercises ask for study material that would be equivalent to exercise material. Also, during the lectures - make sure to ask and understand what will be exam material.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 9-11 timmar/vecka)

I'm personally disappointed about the exam. I think some questions were vague. I followed every lecture with attention because I think the course is very interesting but I think the slide and explanations were too light and did not allow me to answer correctly the exam questions sometimes. For example, the question about sub-optimization, I think it was difficult to find real explanations in the lecture that would allow me to answer accurately. Also the calculation questions, it might be good to add small exercises before the exam. Overall, I think the course is really interesting, the project as well, but the exam did not match with the explanations during the lectures...

I think the theme of the project was very interesting, I believe with the small adjustments suggested it can be an amazing course!

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)

Sorry if I sound harsh, but I hope that you read my feedback on the course and make suitable changes. I really do believe that a course in LCA is important for all engineers, but sadly the course did not live up to my expectation and I do not feel like it has given me enough tools to conduct a LCA in the future.

SPECIFIC QUESTIONS

RESPONSE DATA

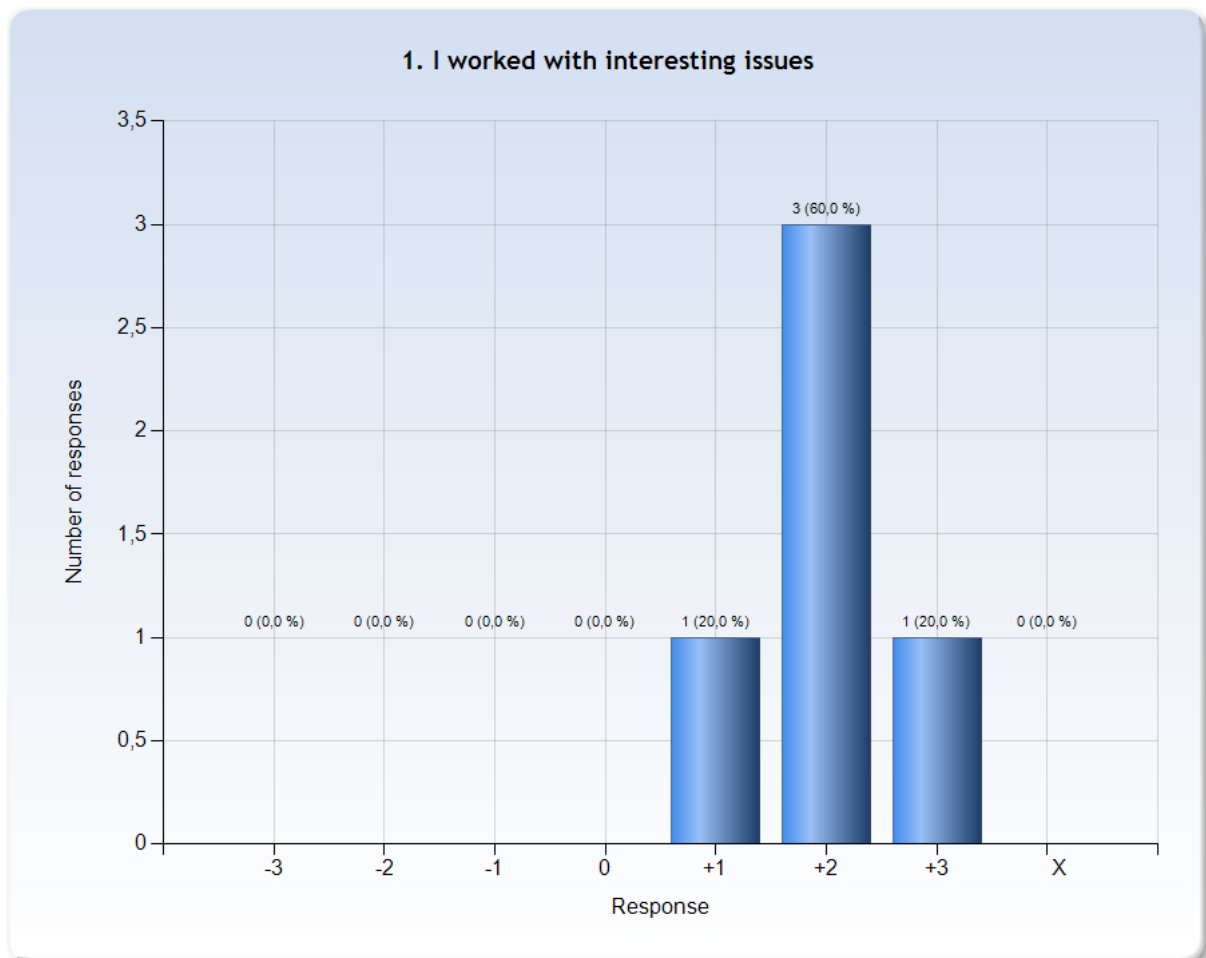
The diagrams below show the detailed response to the LEQ statements. The response scale is defined by:

-3 = No, I strongly disagree with the statement

0 = I am neutral to the statement

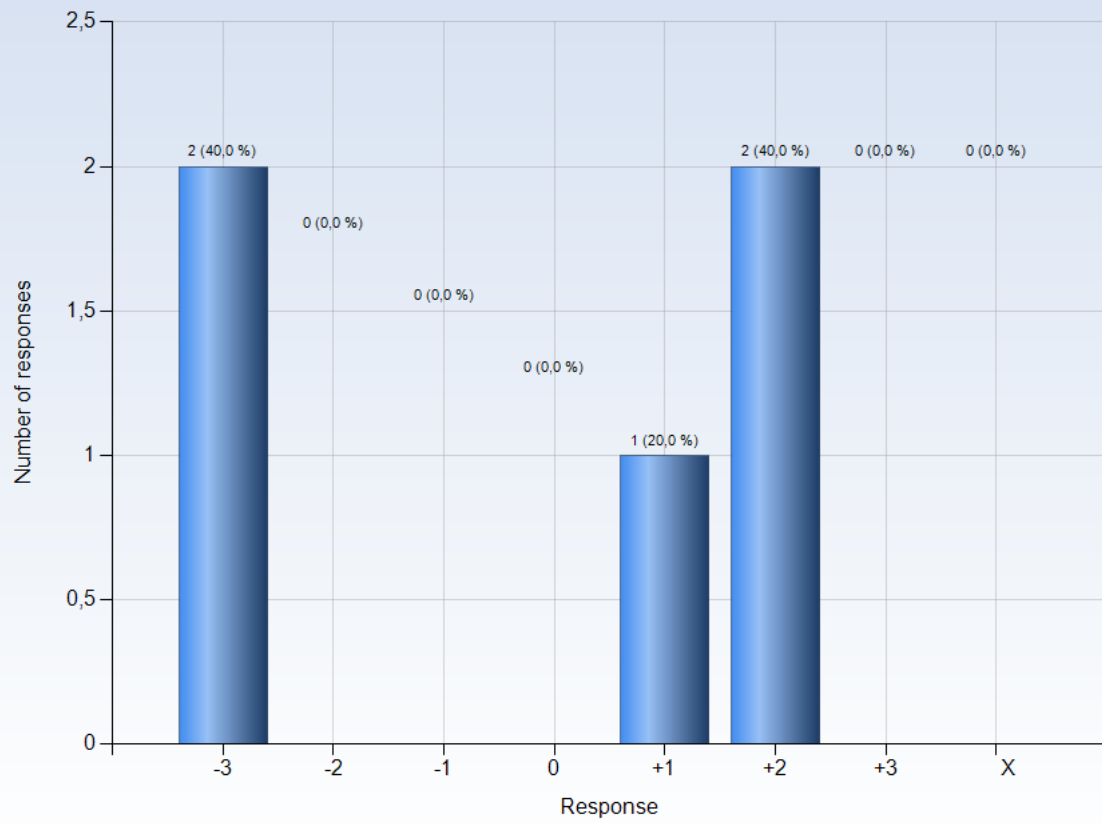
+3 = Yes, I strongly agree with the statement

X = I decline to take a position on the statement



Comments

4. The course was challenging in a stimulating way

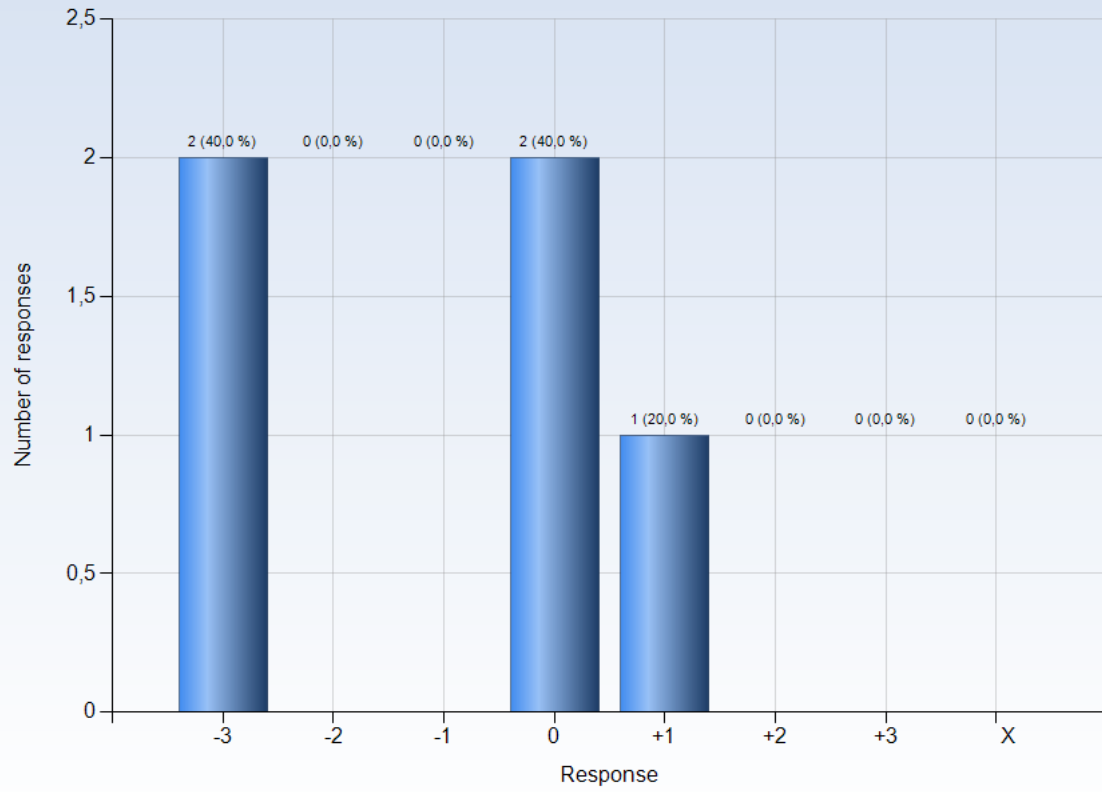


Comments

Comments (My response was: -3)

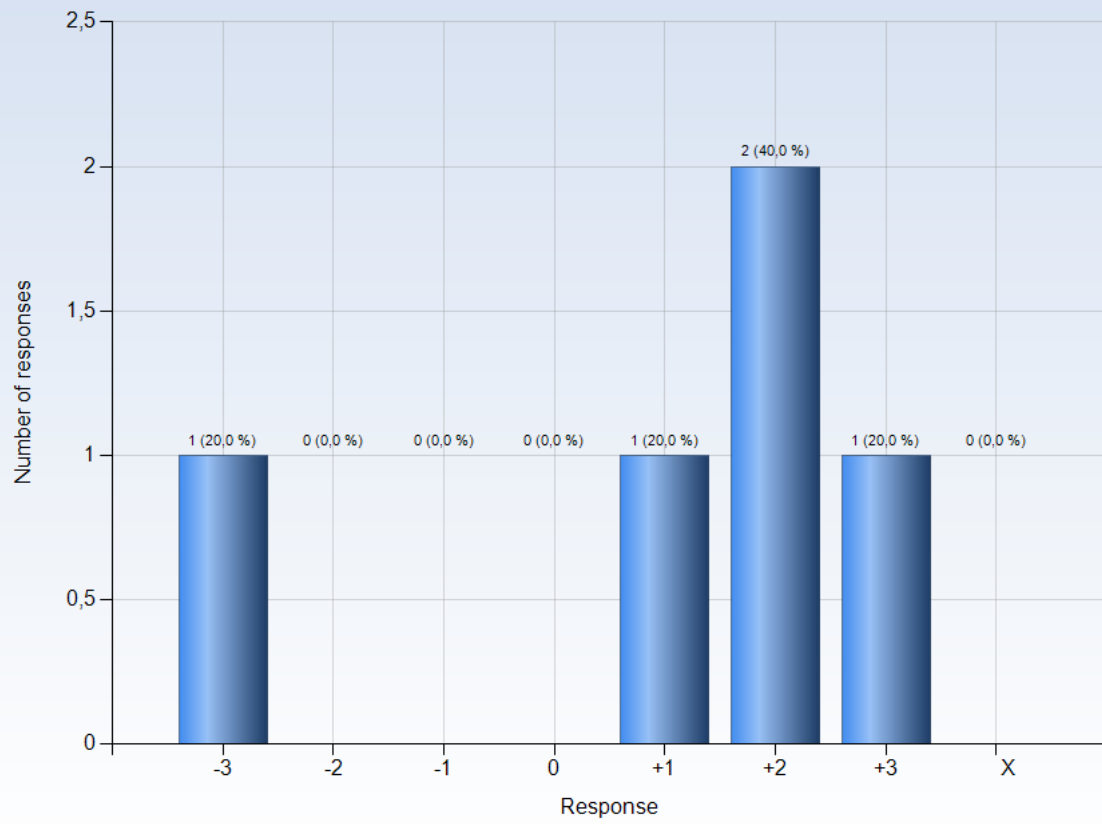
No clear instructions on what I was expected to learn. Also there was no way for me to control my knowledge (eg exercises)

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



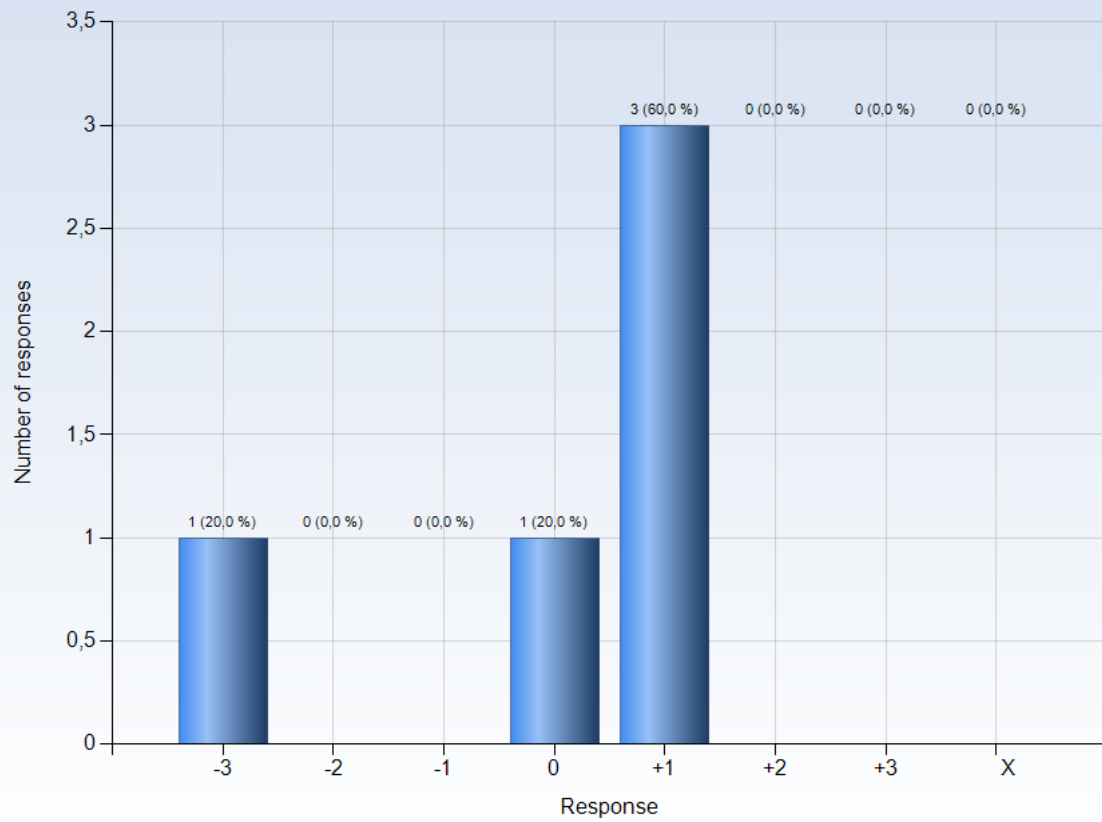
Comments

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



Comments

11. Understanding of key concepts had high priority

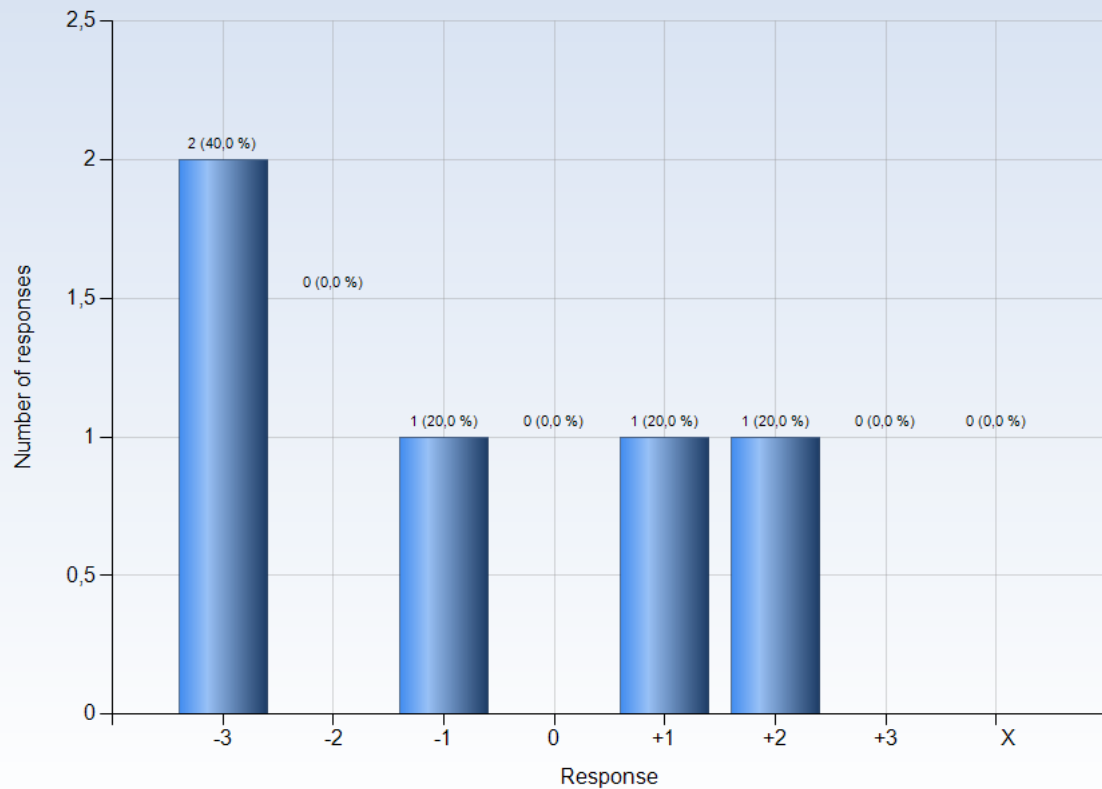


Comments

Comments (My response was: -3)

Same as above - no clear instructions on what was important to know.

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



Comments

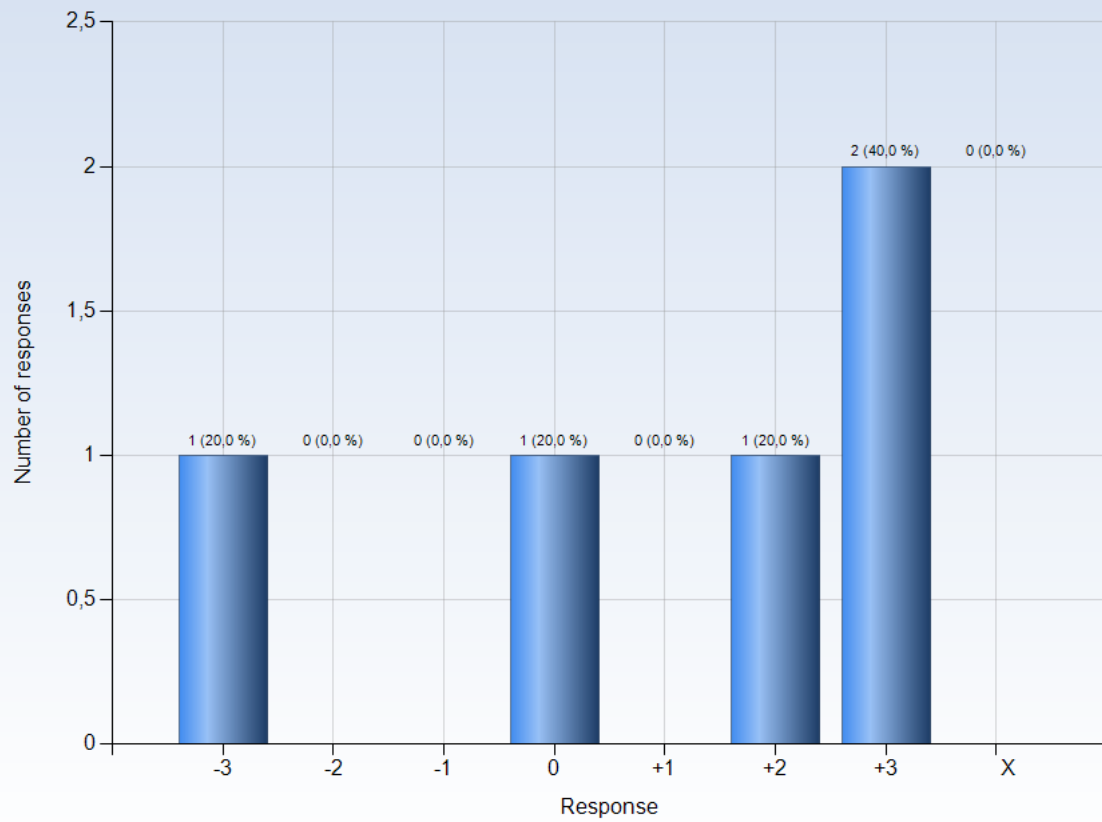
Comments (My response was: -3)

The lectures was very unclear and unstructured and it was not clearly stated if all lectures was coursematerial or not. Apart from that, all other course activities had to be done without support from teachers, which made it hard to know if the work was executed correctly or if I had grasp the concept in a correct way.

Comments (My response was: -1)

There were a lot of lectures I did not understand why they were necessary, they felt more like inspirational TED-talks, and then the exam questions on said material were way more complex or about subjects we had not discussed.

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

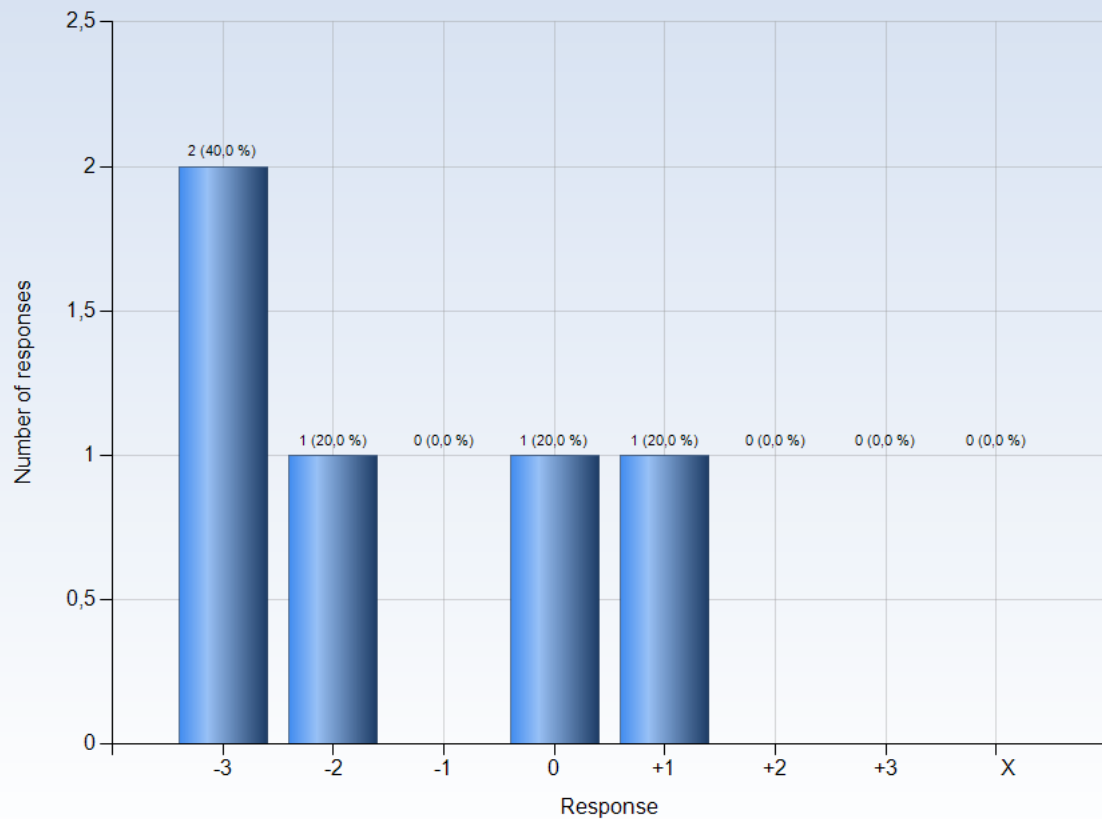


Comments

Comments (My response was: -3)

There was no possibility to practise the knowledge, was not even possible to discuss problems with the teachers. No help or answers on e-mails during the project work is one example of the absence of help and feedback throughout the course.

16. The assessment on the course was fair and honest



Comments

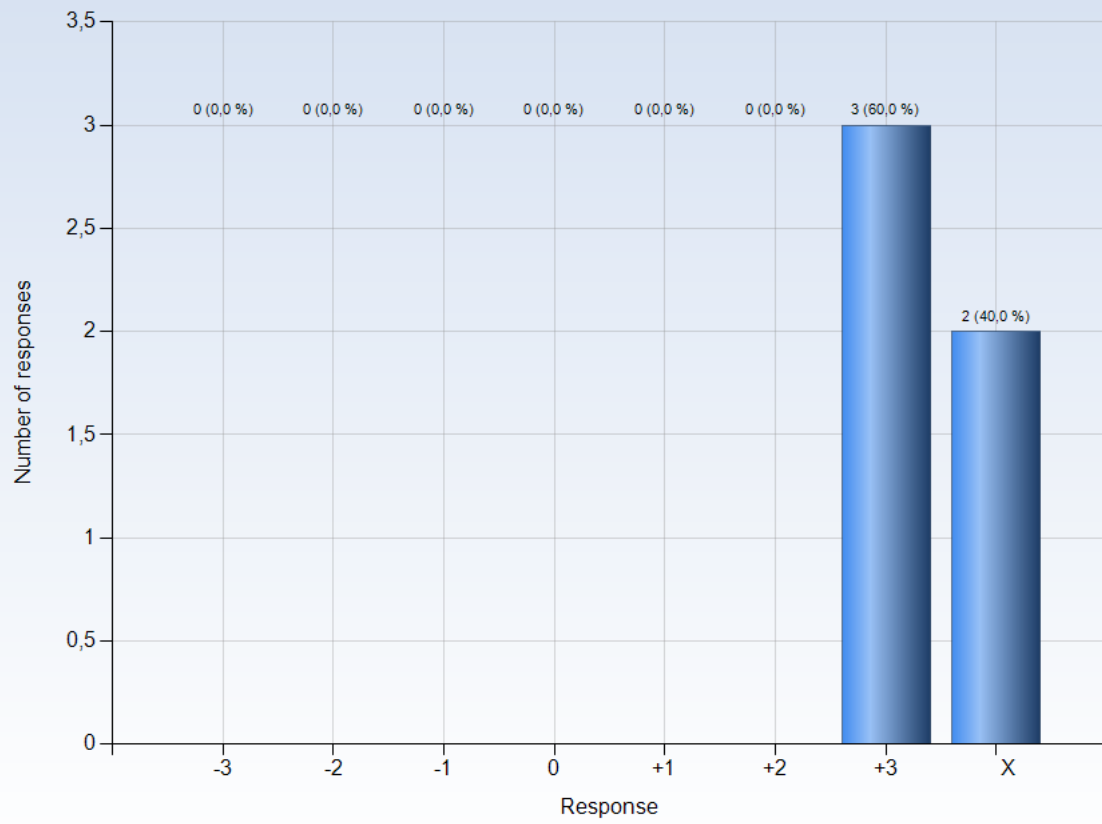
Comments (My response was: -3)

Unclear, unstructured and low level of the lectures but seems like the correction of the exam was very strict.

Comments (My response was: -2)

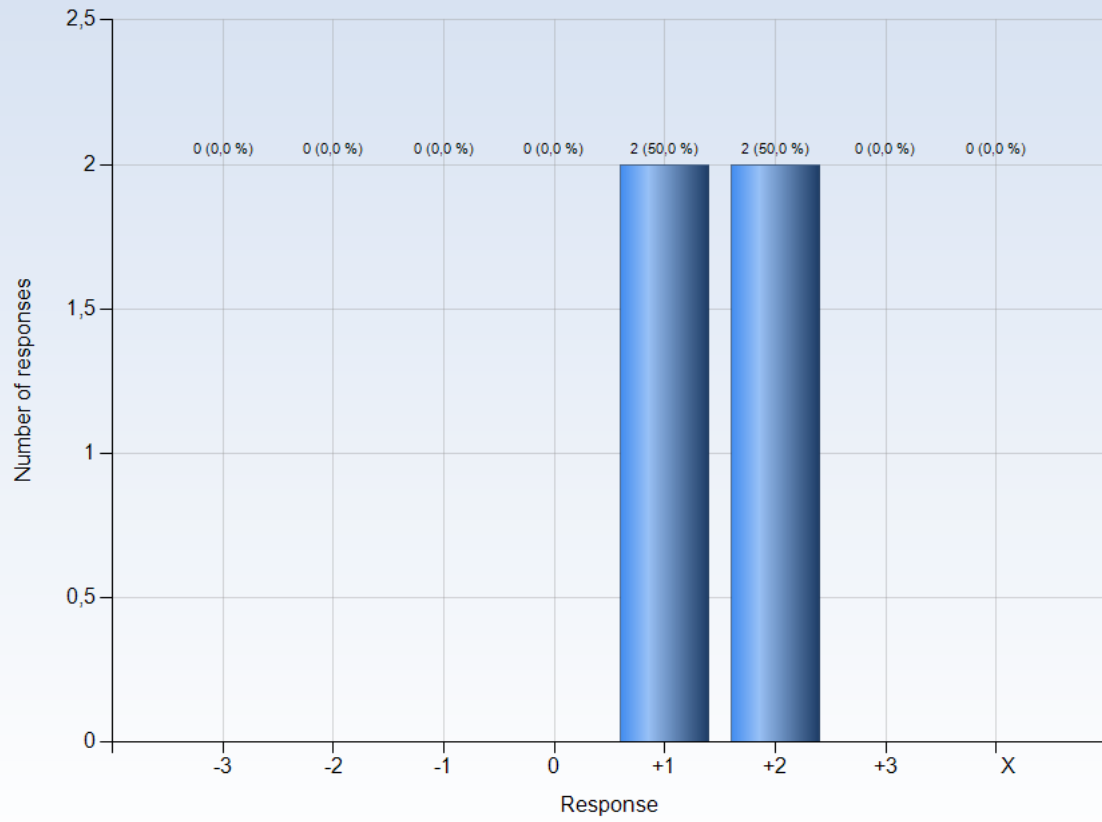
I think that the online exam is a good idea as we can share with other students during the exam. However, I think that some questions were really unclear and it was difficult to understand how complete the answer should be. Moreover, I felt that sometimes the course did not give enough information to answer the questions with more accuracy. I'm also very surprised when comparing the grades for each question and the whole exams with my fellow students that we do not have the same grades at all while we have discussed the answers together, agreed on answers and even did the same calculations...

17. My background knowledge was sufficient to follow the course



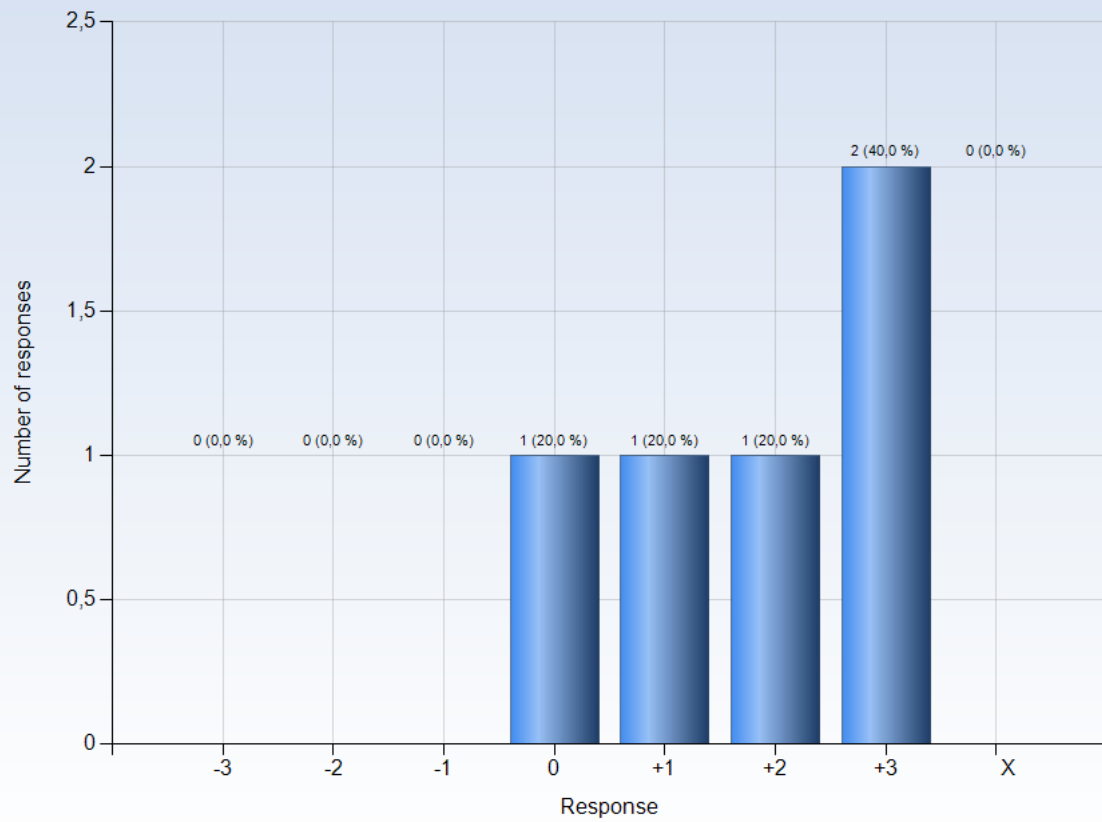
Comments

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



Comments

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

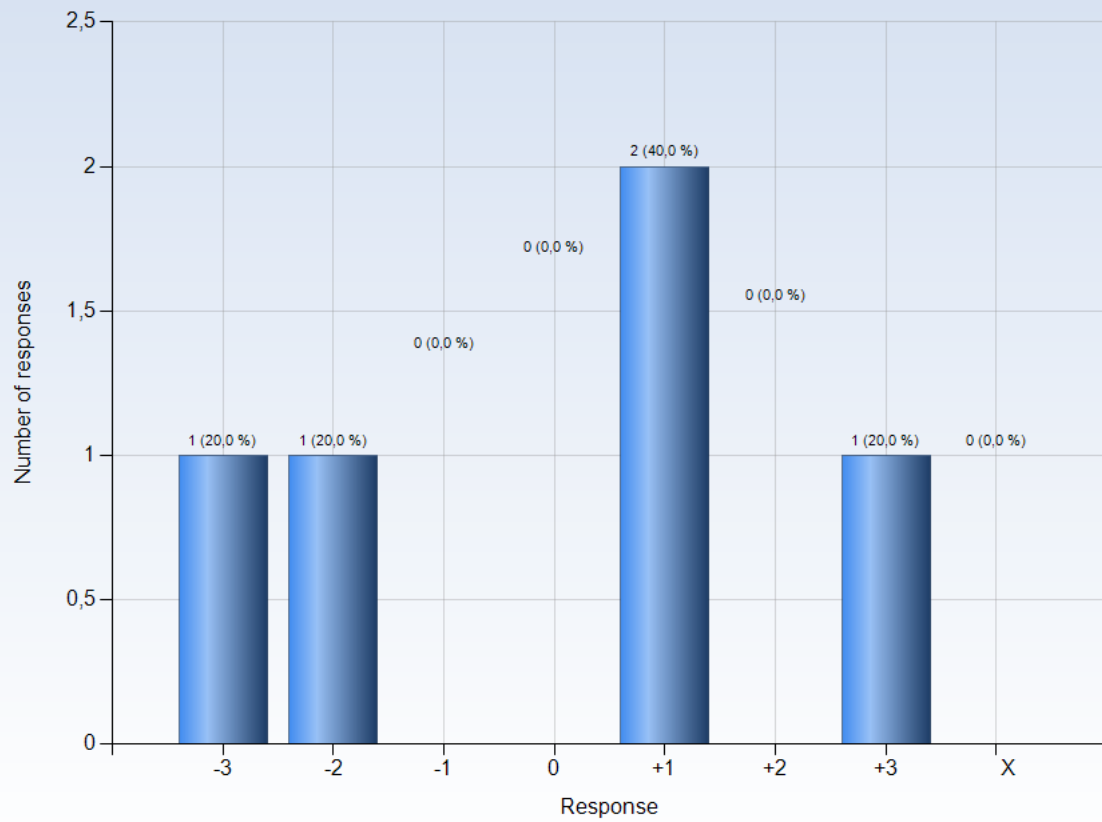


Comments

Comments (My response was: 0)

Talk to other students was the only way to figure out if I had got things right or not. The only problem was that they felt the same, that they did not know what was expected from them.

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



Comments

Comments (My response was: +1)

To a certain degree. It didn't help that James went on holiday when Icopt didn't work.

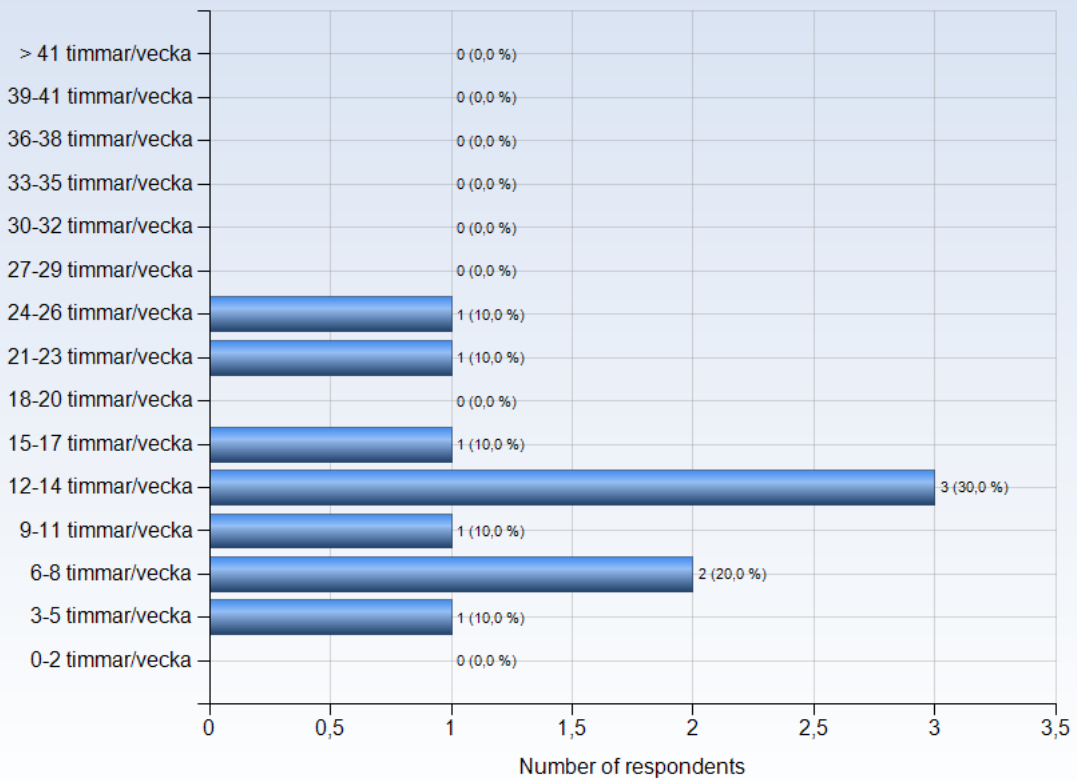


BB2570 - 2019-01-31

Antal respondenter: 18
Antal svar: 10
Svarsfrekvens: 55,56 %

ESTIMATED WORKLOAD

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



Comments

Comments (I worked: 3-5 timmar/vecka)

It would have been better if we had some more scheduled classes as some of the concepts were a bit contemporary and needed more time according to me.

Comments (I worked: 12-14 timmar/vecka)

Hard to remember at the moment but I think the workload of the course was a little bit too much pushed towards the end of the semester due to the project. WOULD be better to be able to begin on that earlier to even it out.



LEARNING EXPERIENCE

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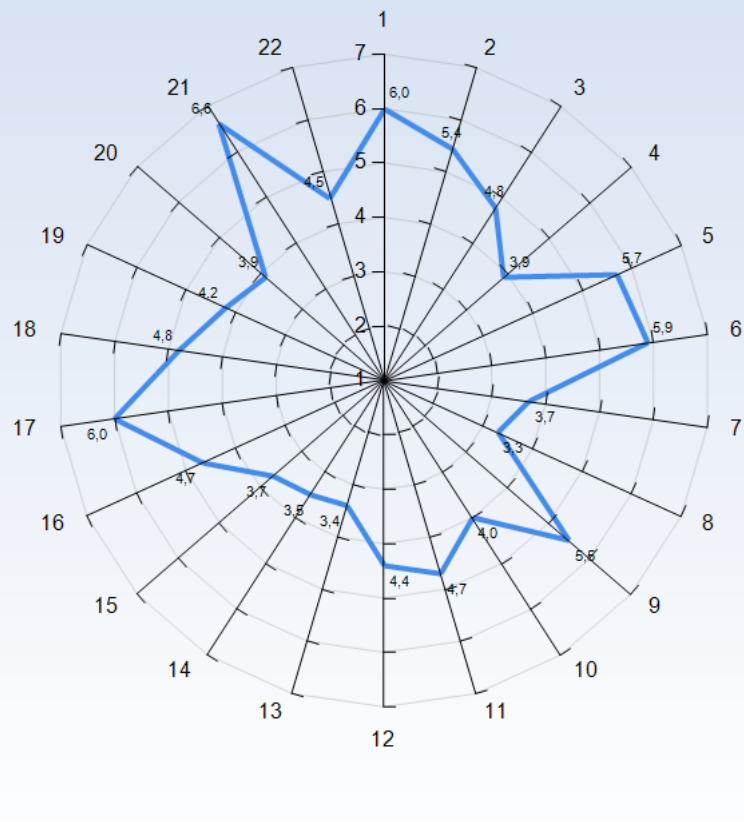
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Average response to LEQ statements - all respondents





KTH Learning Experience Questionnaire v3.1.4

Meaningfulness - emotional level

Stimulating tasks

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6. The atmosphere on the course was open and inclusive (d)

Comprehensibility - cognitive level

Clear goals and organization

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

Understanding of subject matter

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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.

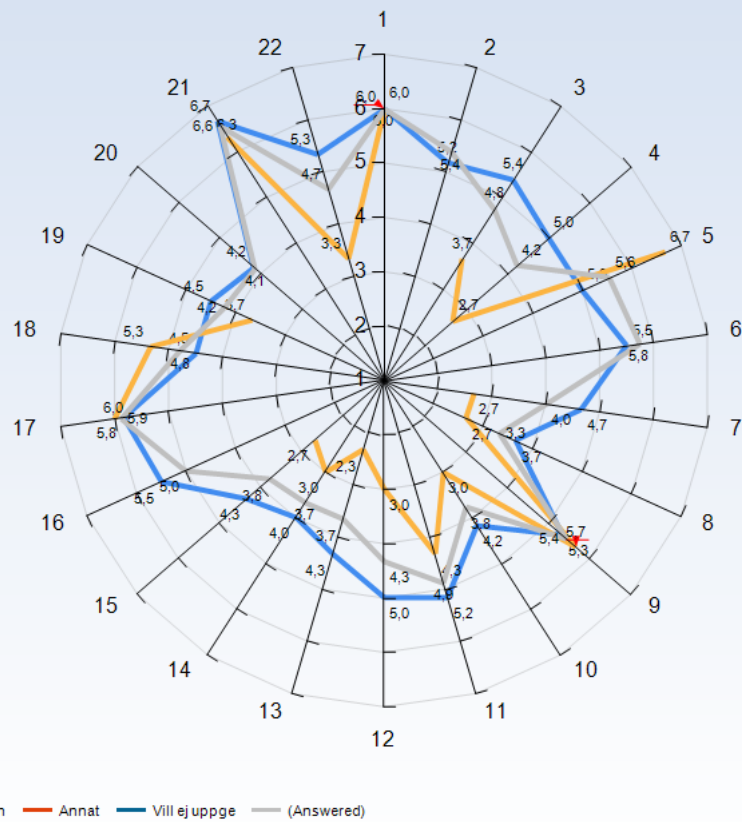
Biggs J. & Tang, C. (2011). *Teaching for Quality Learning at University*, Chapter 6, pp. 95-110. Maidenhead: McGraw Hill.

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: Kvinna)

Nice to see as many women as men as teachers !

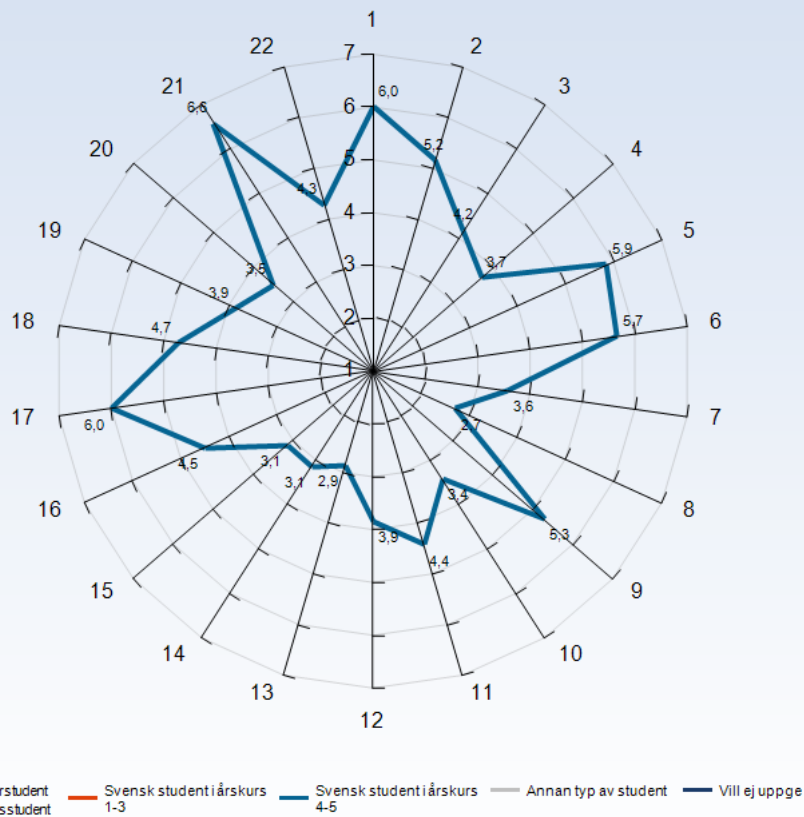
Maybe we could discuss how the goal "gender equality" for 2030 could be linked to sustainability, since everything is interconnected ? Would be interesting and would sensibilize to these kinds of questions that are crucial for our future

I don't really have much to say. it's equal for all.

Comments (I am: Man)

Nothing to say.

Average response to LEQ statements - per type of student



Comments

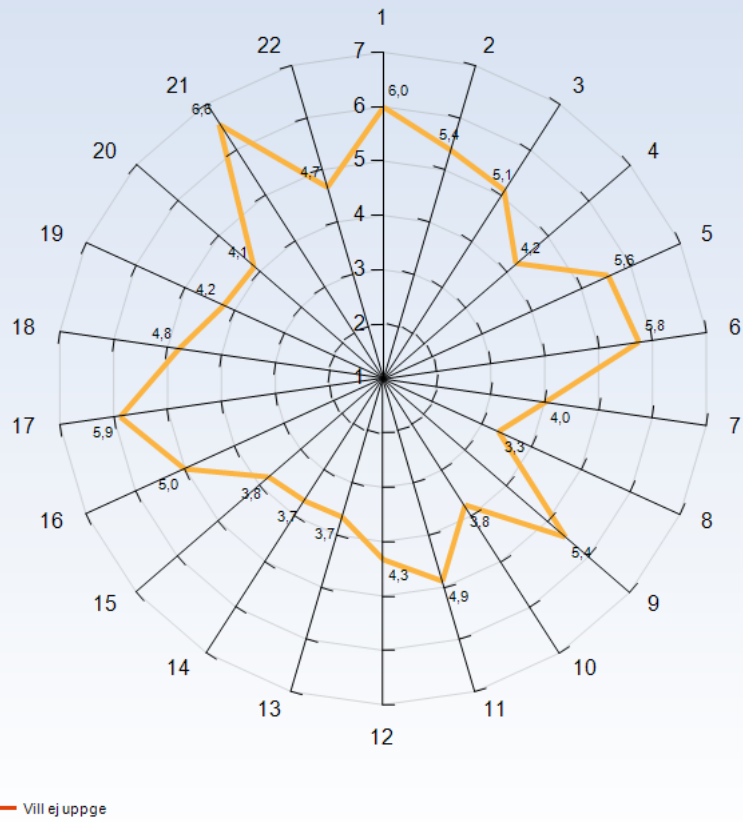
Comments (I am: Internationell masterstudent)

Hard to feel integrated with swedish students. This is nice that the groups for the projects were done randomly, in order to mix us up a bit, because if you leave the choice it would not happen unfortunately.
 Sometimes when a student is asking something important about the course in swedish during the break, please teachers, answer in english, because it can feel like we don't have access to all the information..
 i definitely learnt this course from an international perspective.

Comments (I am: Svensk student i årskurs 4-5)

Didn't put much emphasis on this.

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: 3-5 timmar/vecka)

getting to know how we can implement the knowledge of the life cycle of a product in several ways.

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

The project

The systems thinking lectures.

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

Working together, and discussing the subject

What was the best aspect of the course? (I worked: 12-14 timmar/vecka)

The lectures and class activities were good.

Home exam

The openness to discussion and collaboration.

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

I really liked the project part of the course, it gave a good insight to how LCAs in practice should be carried out and connected the course really well with biotechnology.

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

The project was one of the most interesting projects I have done. The only problem was the time limit and the disappointment at not have the time necessary to collect the necessary data for the analysis, as most of or data was made up.

What was the best aspect of the course? (I worked: 24-26 timmar/vecka)

I was really interested in the topic. I wanted to learn more.

What would you suggest to improve?

What would you suggest to improve? (I worked: 3-5 timmar/vecka)

maybe if we had more examples for the topics.

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

More concrete examples for each concept. Maybe more dynamism, for these really interesting topics ?

Scrap lcopt. It totally ruined the course and actually made me permanently sick of anything that has to do with sustainability and lca at all.

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

Clearer tasks, both in terms of the project and in terms of the examination

What would you suggest to improve? (I worked: 12-14 timmar/vecka)

The examination. The home exam in the end lacked a lot of information beforehand, the grading was very unclear, and examiner was not available for questions during the whole exam. Some of the questions also felt like they touched upon subjects not included in the course, or never discussed in lectures or course book. Also, the different group assignments in the project work seemed to be rather different in complexity and scope size.

The information flow about what to expect from the course before every exam and Lcop

Structure of course

Highlight what needs to be known and explain core concepts in a better way

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

I would have liked to get the project already at the start of the course. This would have given us time to get the answers needed (values from companies etc.) to perform the LCA in lcopt. I would also have like to have a better tutorial on how lcopt work as the computers lab we had was very different in levels compared with what was needed for the project. I would also prefer to have had the project graded. In this way you will put in more effort of creating a good LCA.

What would you suggest to improve? (I worked: 21-23 timmar/vecka)

Improve the practical information about the course requirements for each task before hand. Some students work part-time and this would facilitate the study plan for these students.

What would you suggest to improve? (I worked: 24-26 timmar/vecka)

I would defiantly not call the midterm an exam since it was more of a "kontrollskrivning". Also I felt the computer program was flawed. I also felt that what was expected of us on the exam was not what we learned in the lecture. The lectures was super basic whilst the exam required a more deeper understanding which we had not learnt. I also think it would be better to present the projects earlier on since it gives the student a chance to plan their studies better. In the end we didn't have time to perform the project the way we wanted (because of time limitations as well as problems with the program). James was really quick to respond though to questions about the program!



What advice would you like to give to future participants?

What advice would you like to give to future participants? (I worked: 3-5 timmar/vecka)
to make all the concepts clear from the beginning.

What advice would you like to give to future participants? (I worked: 6-8 timmar/vecka)
Go further on your side, and take the opportunity to discuss with teachers

What advice would you like to give to future participants? (I worked: 9-11 timmar/vecka)
Work together and discuss a lot. It will help with the understanding of the course

What advice would you like to give to future participants? (I worked: 12-14 timmar/vecka)
Put a lot of energy and time into the project work.

Do your exams together

It might be good to do more research on your own to really understand how to interpret some of the things learned during lectures

What advice would you like to give to future participants? (I worked: 24-26 timmar/vecka)

Try to explore the subject on your own there are a lot of info online which was what I used to pass the exam.

Is there anything else you would like to add?

Is there anything else you would like to add? (I worked: 3-5 timmar/vecka)
No, I guess that'll do.

Is there anything else you would like to add? (I worked: 6-8 timmar/vecka)
very nice course, thank you !

Is there anything else you would like to add? (I worked: 12-14 timmar/vecka)

I think there is a lot of improvements that needs to be made on this course. Knowing that it was completely new, I had understanding of it sometimes, but I believe that there are a lot that can be done.

Consequent lectures (hard when there are several speakers each time)

Define goals better and learning outcomes

Time planning, it was too little to do in the beginning and too much towards the end. Spread it out.

Project could be a little bit overwhelming. We basically went from designing the process of a cup of coffee, to a full industrial scale production of a certain good. The transition could be smoother

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

Interesting course that is different from other BB courses.

Is there anything else you would like to add? (I worked: 24-26 timmar/vecka)

More discussion sessions so the student really understands the concepts

SPECIFIC QUESTIONS



RESPONSE DATA

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

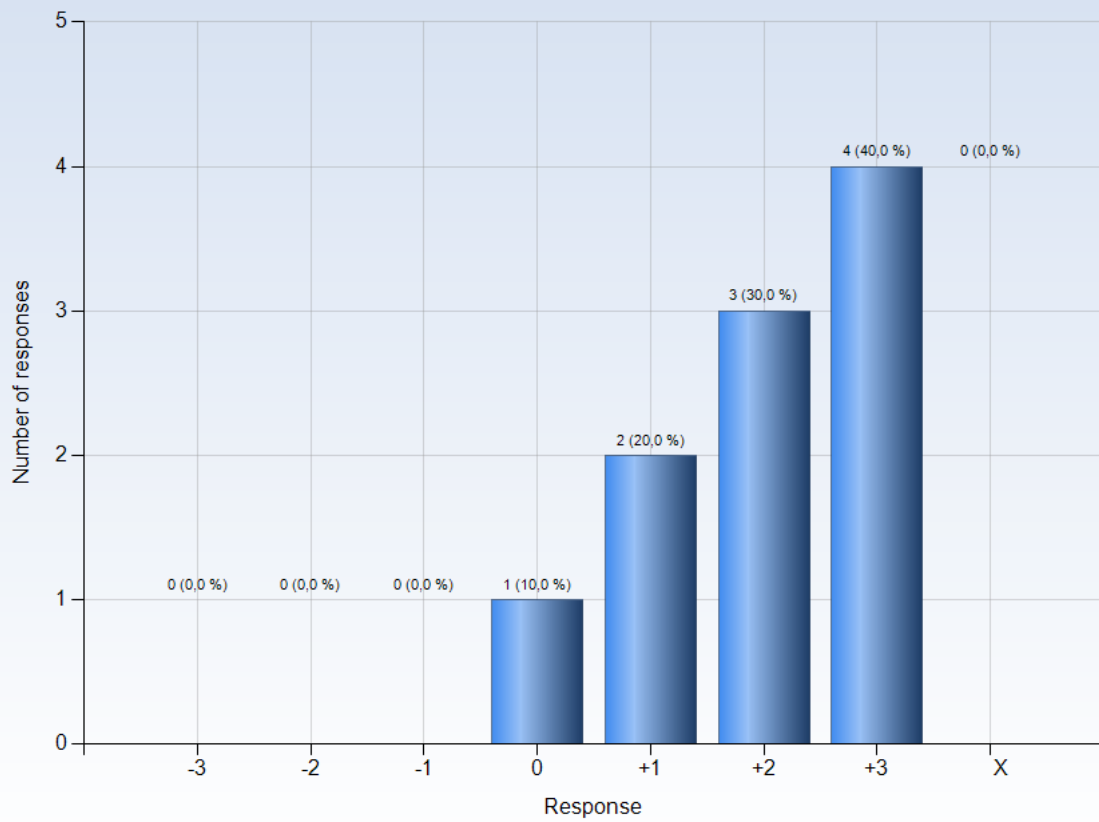
-3 = No, I strongly disagree with the statement

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

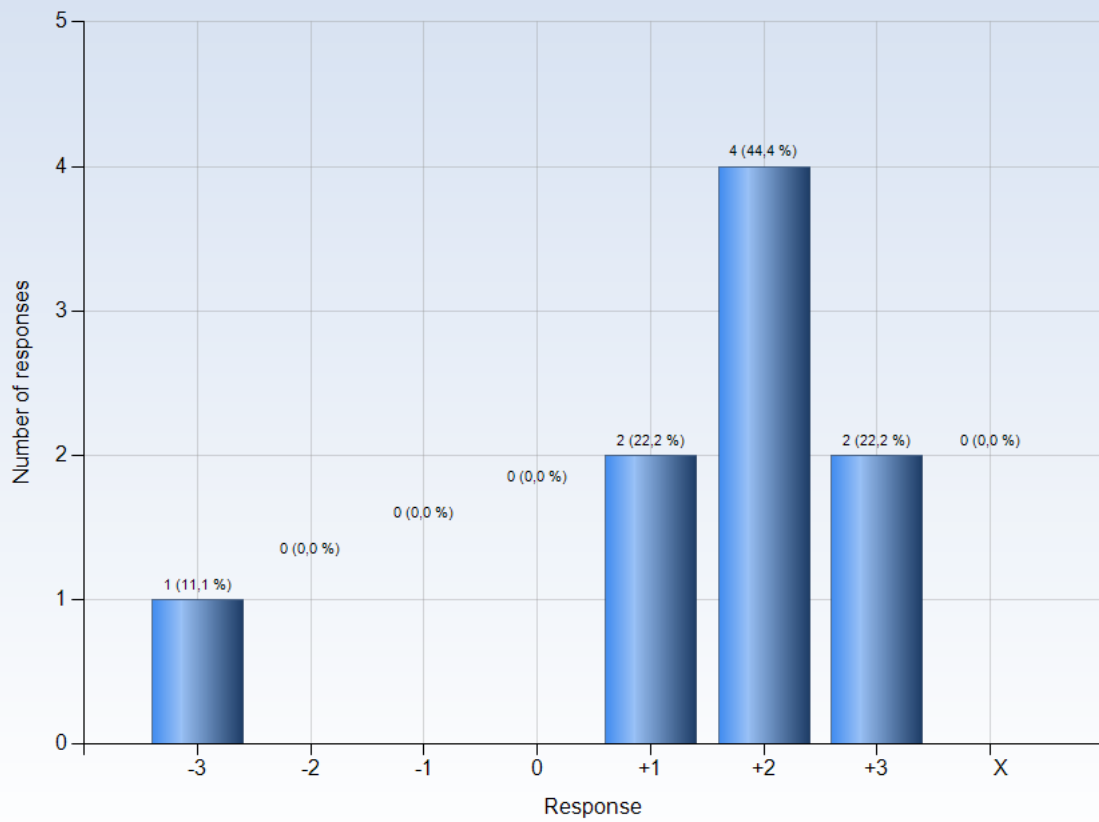


Comments

Comments (My response was: +2)

I think this was a valuable course that I might benefit from.

2. I explored parts of the subject on my own

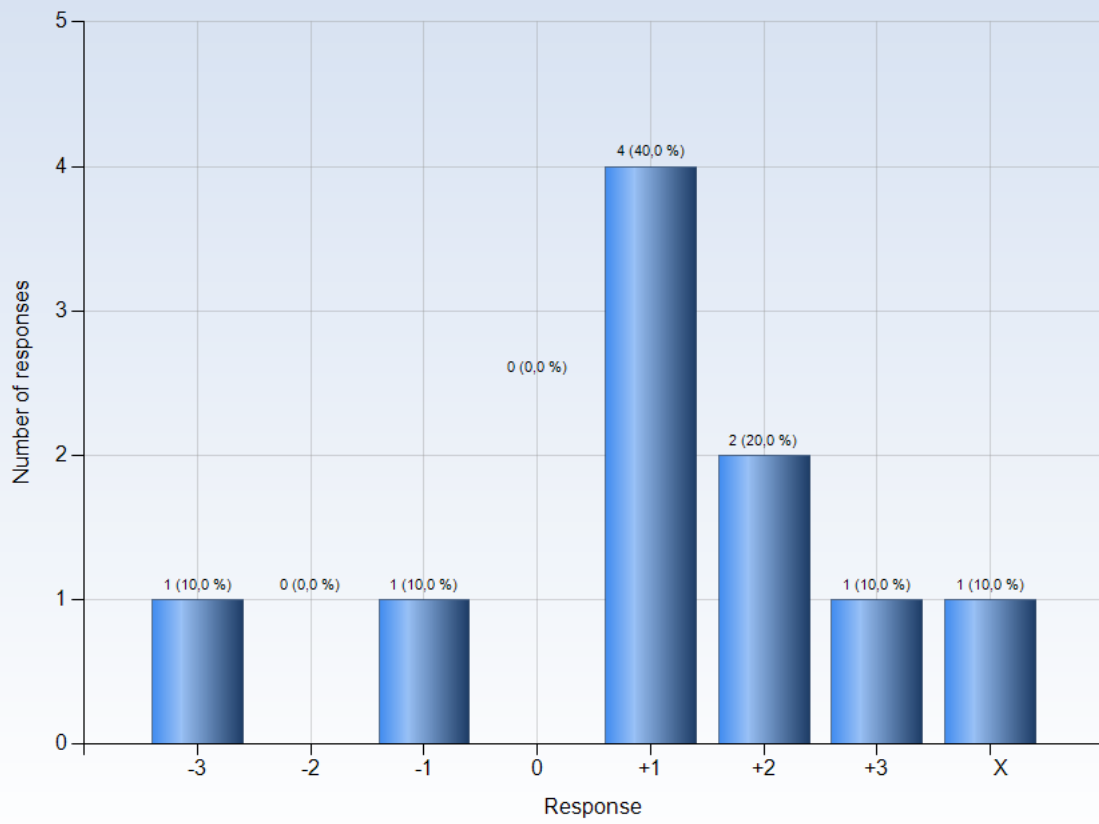


Comments

Comments (My response was: +1)

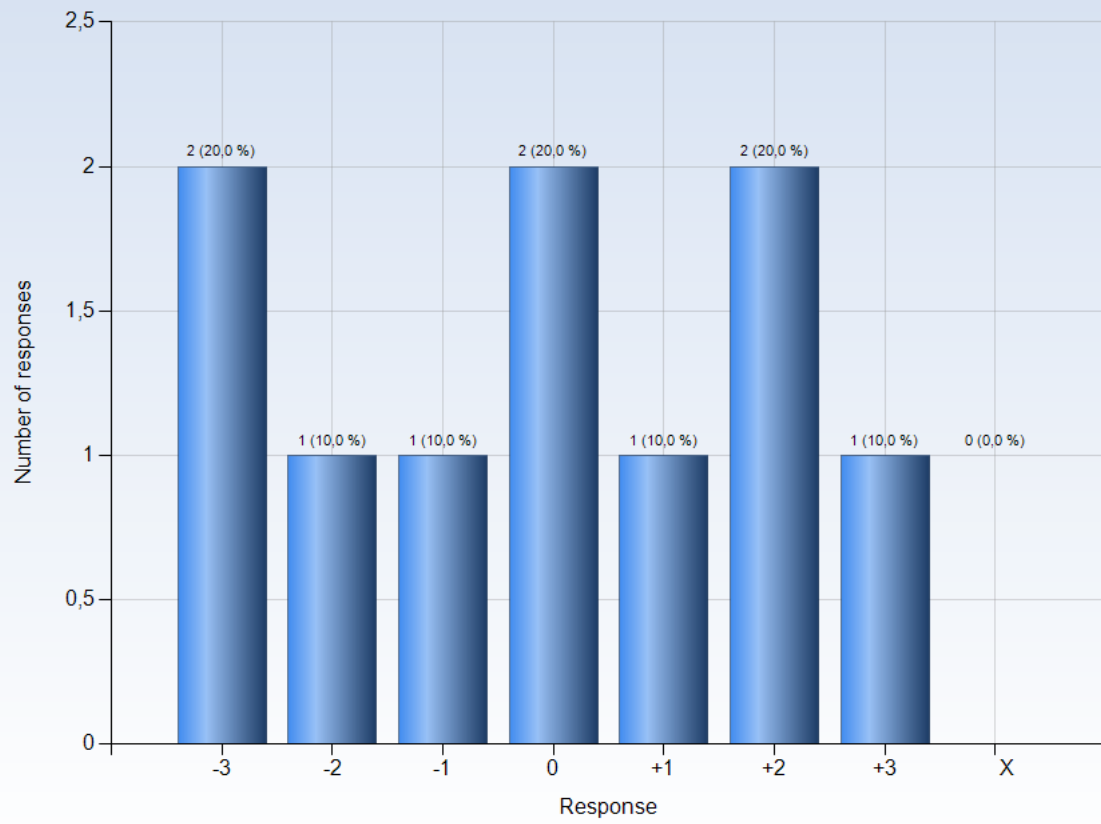
Even though it can be hard to grasp, I like the holistic idea of it and think it can be implemented in nearly every type of product.

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



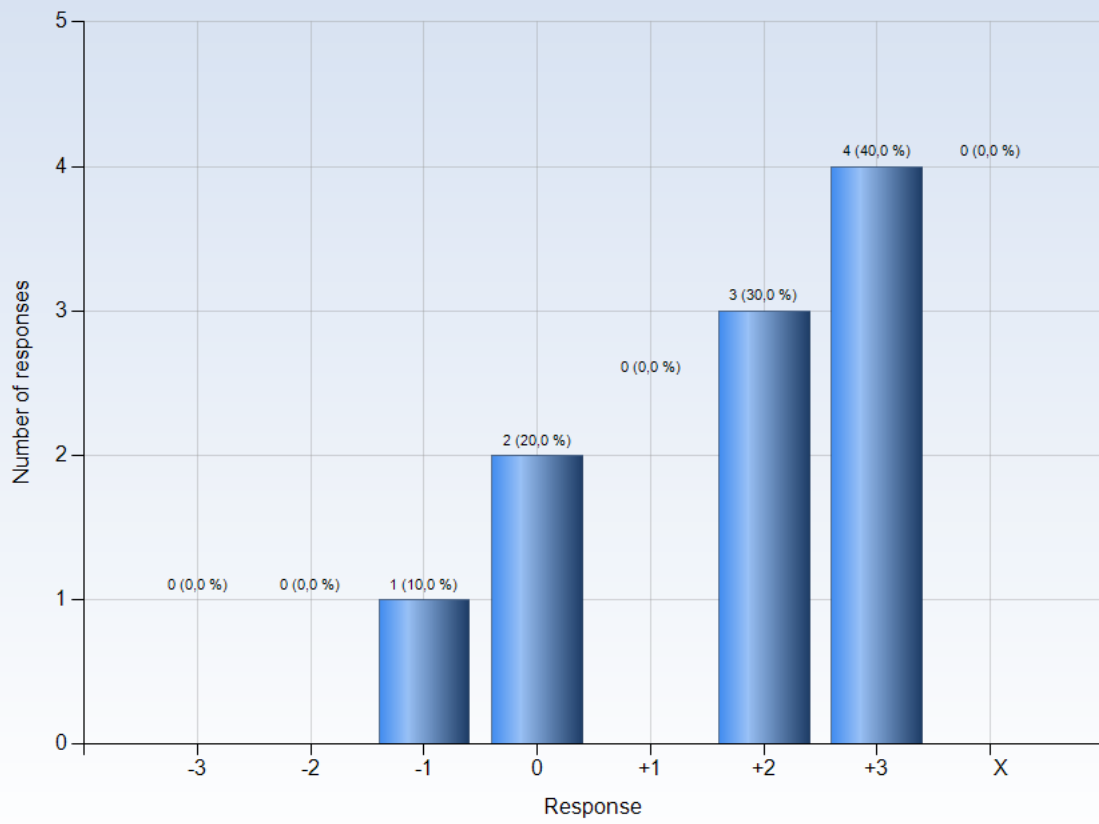
Comments

4. The course was challenging in a stimulating way



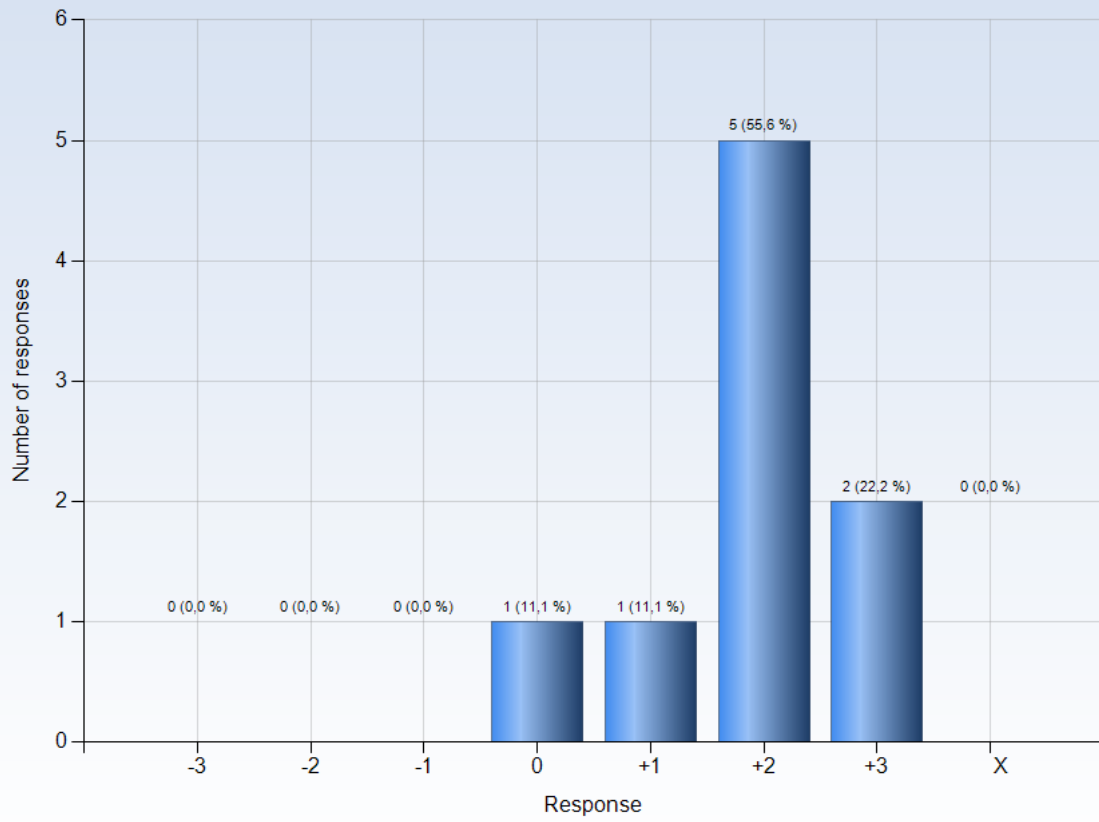
Comments

5. I felt togetherness with others on the course



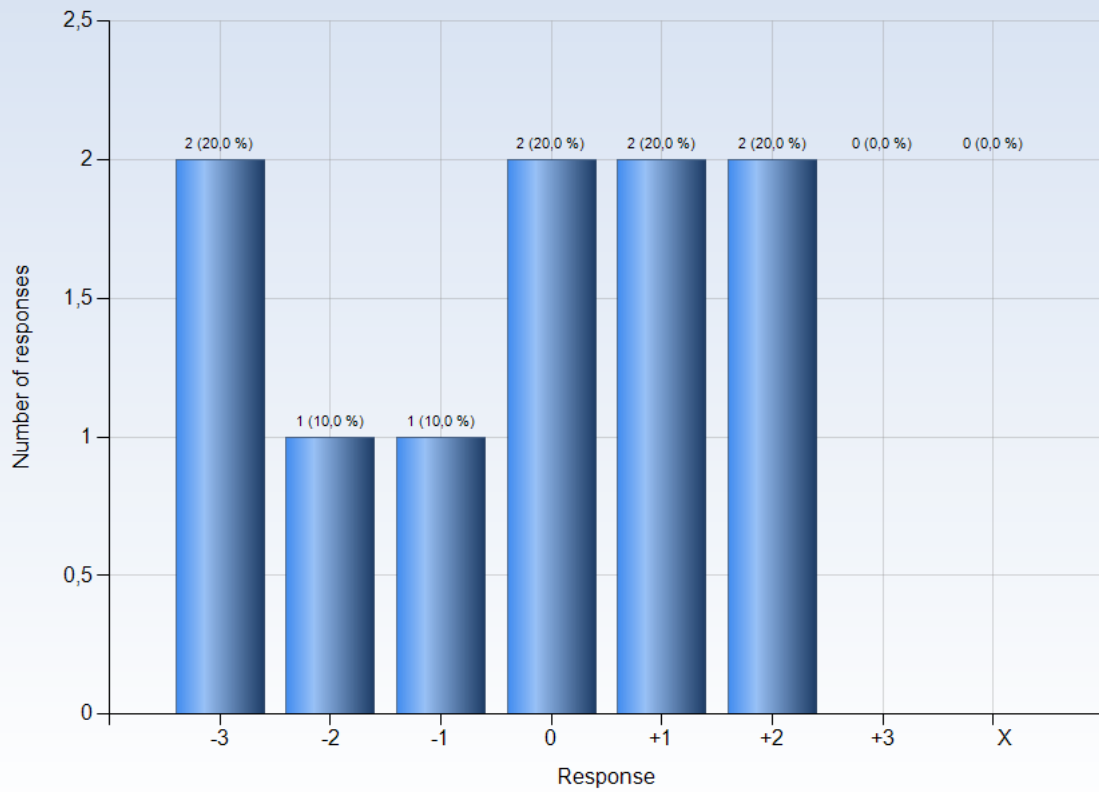
Comments

6. The atmosphere on the course was open and inclusive



Comments

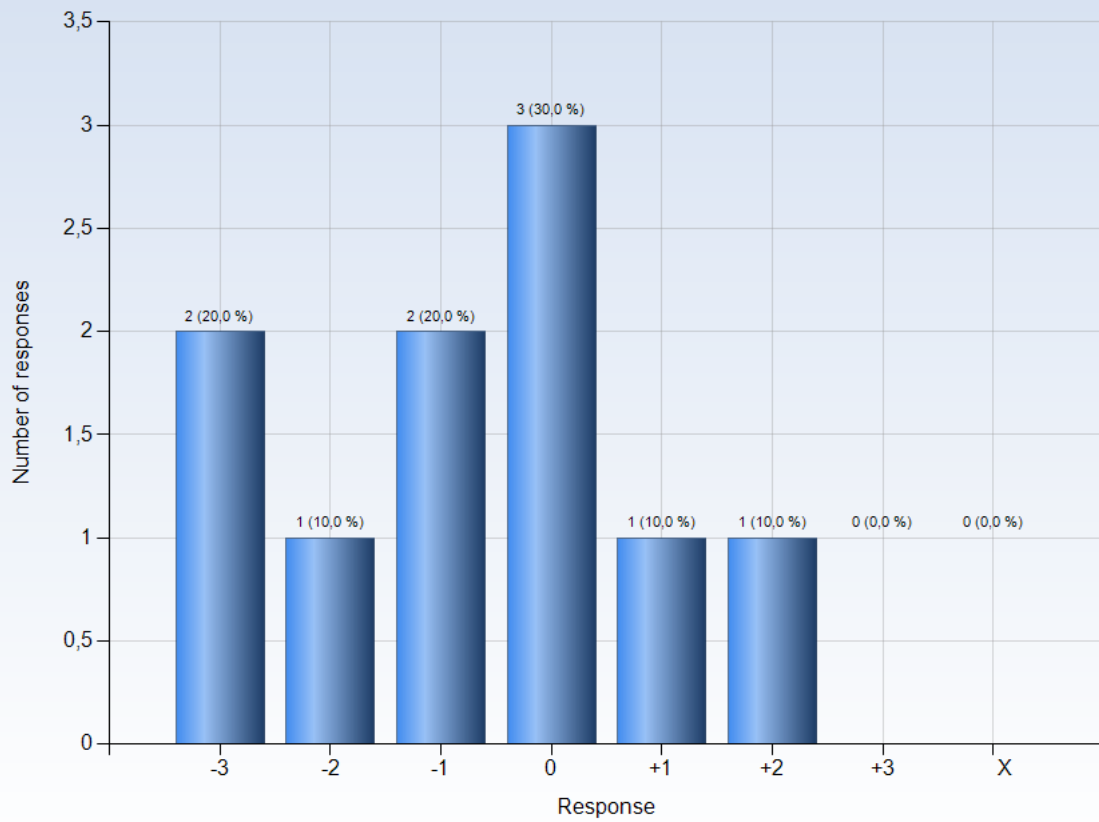
7. The intended learning outcomes helped me to understand what I was expected to achieve



Comments

Comments (My response was: -2)
Unclear what was expected.

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

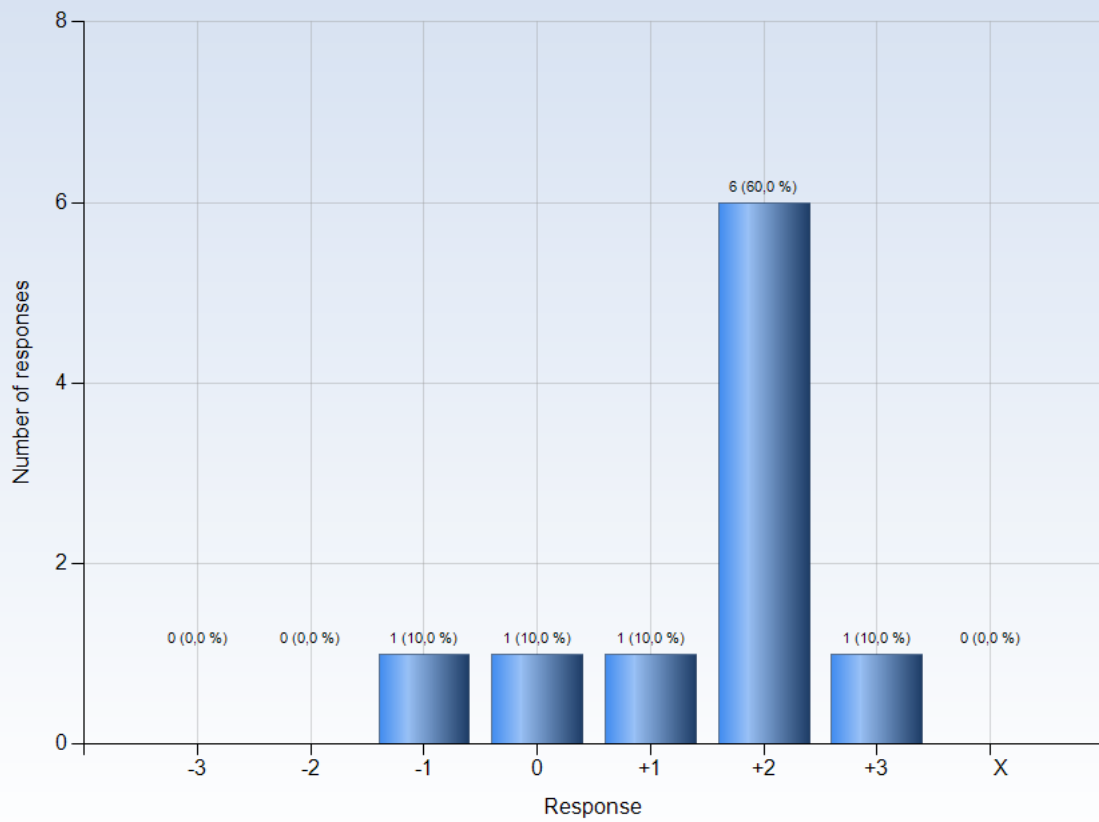


Comments

Comments (My response was: -3)

I could not plan ahead, had to do most things at the last minute. This made the reflection and processing of information difficult

9. I understood what the teachers were talking about

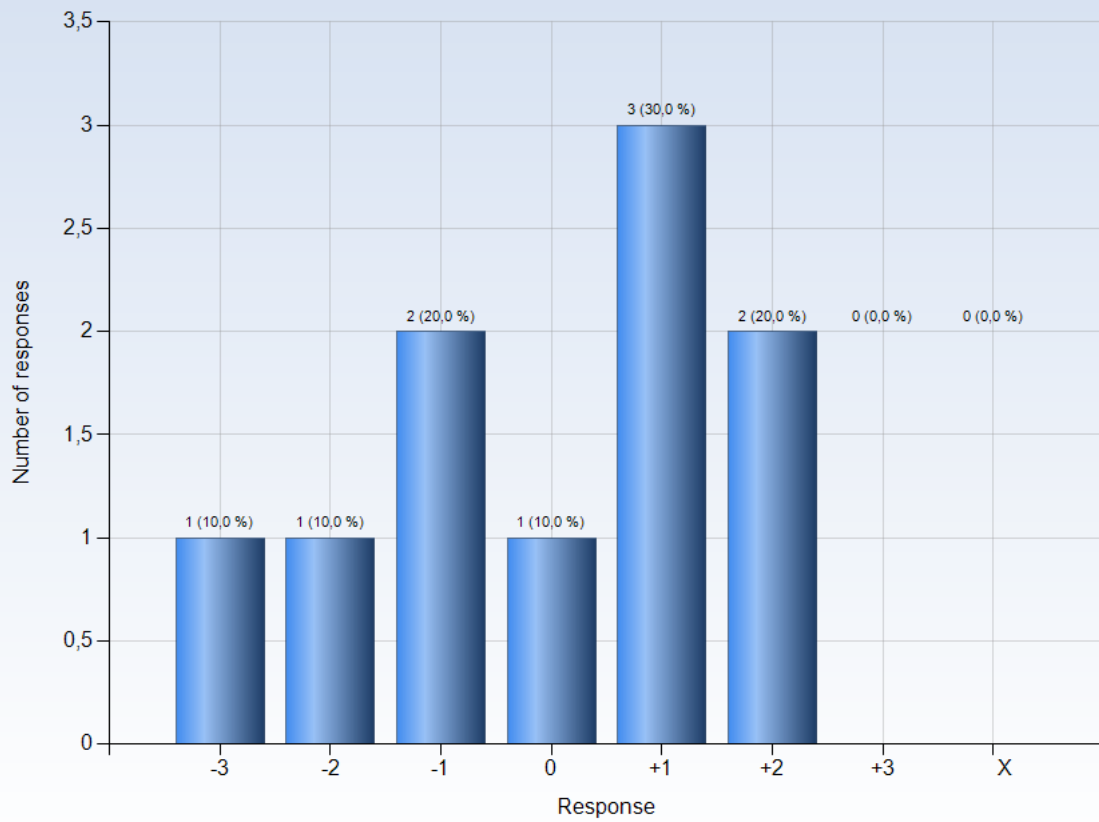


Comments

Comments (My response was: +1)

Kind of, but it's hard to understand new concepts sometimes. Would need more examples in class in order to fully understand some terms.

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



Comments

Comments (My response was: -2)

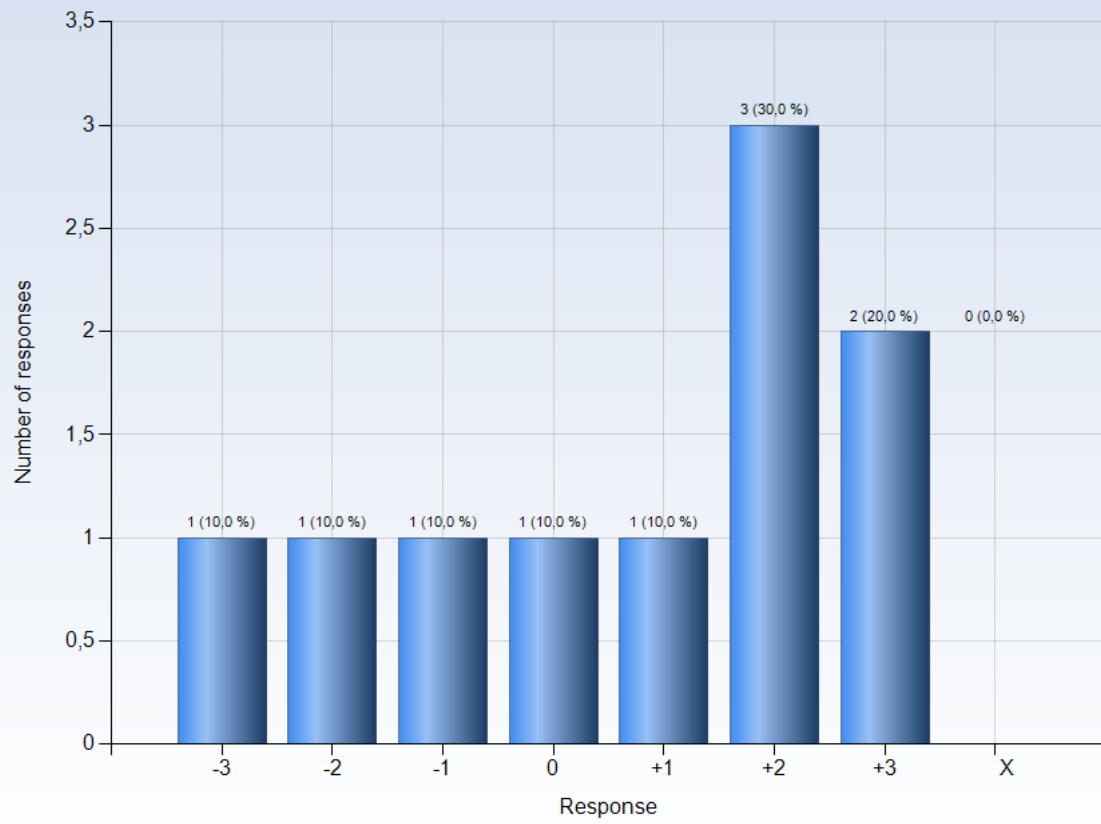
Often there were only terms and words on a paper, without any real life explanation on how it should be used.

Comments (My response was: +1)

more would be welcome

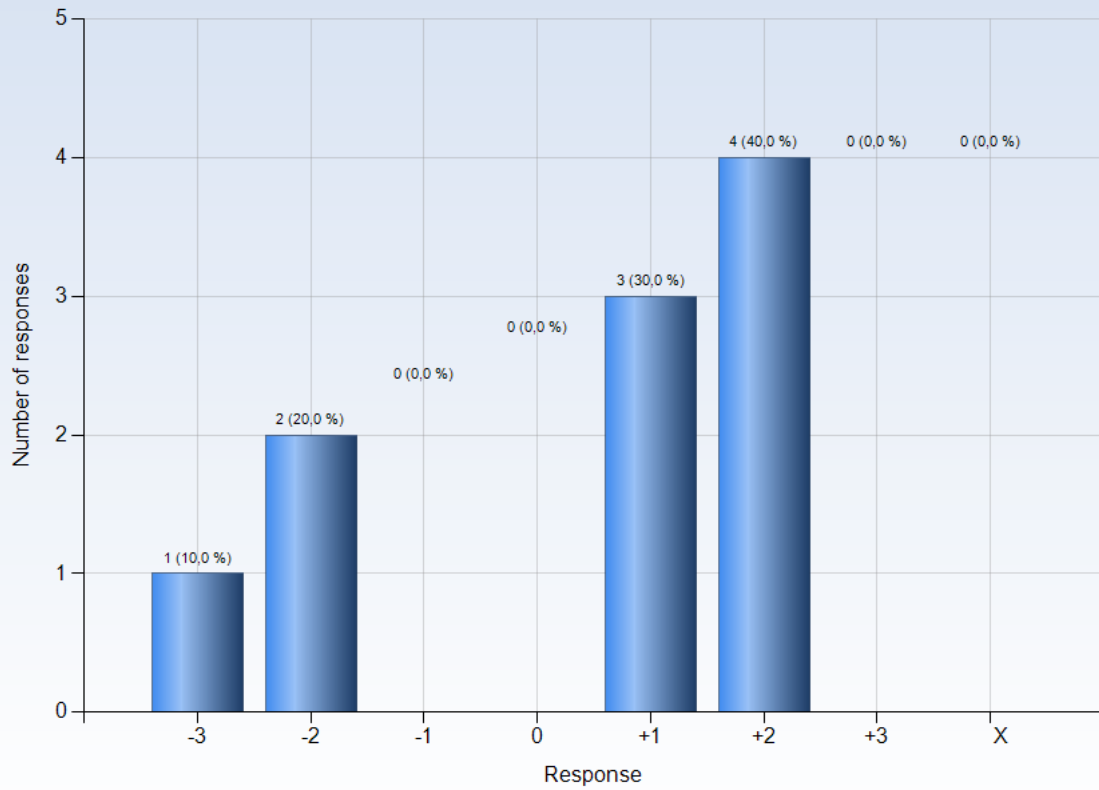
There was a huge gap between the excersices and project work. I would recommend to change the second excercise to include some of the difficulty one may experience while doing the project

11. Understanding of key concepts had high priority



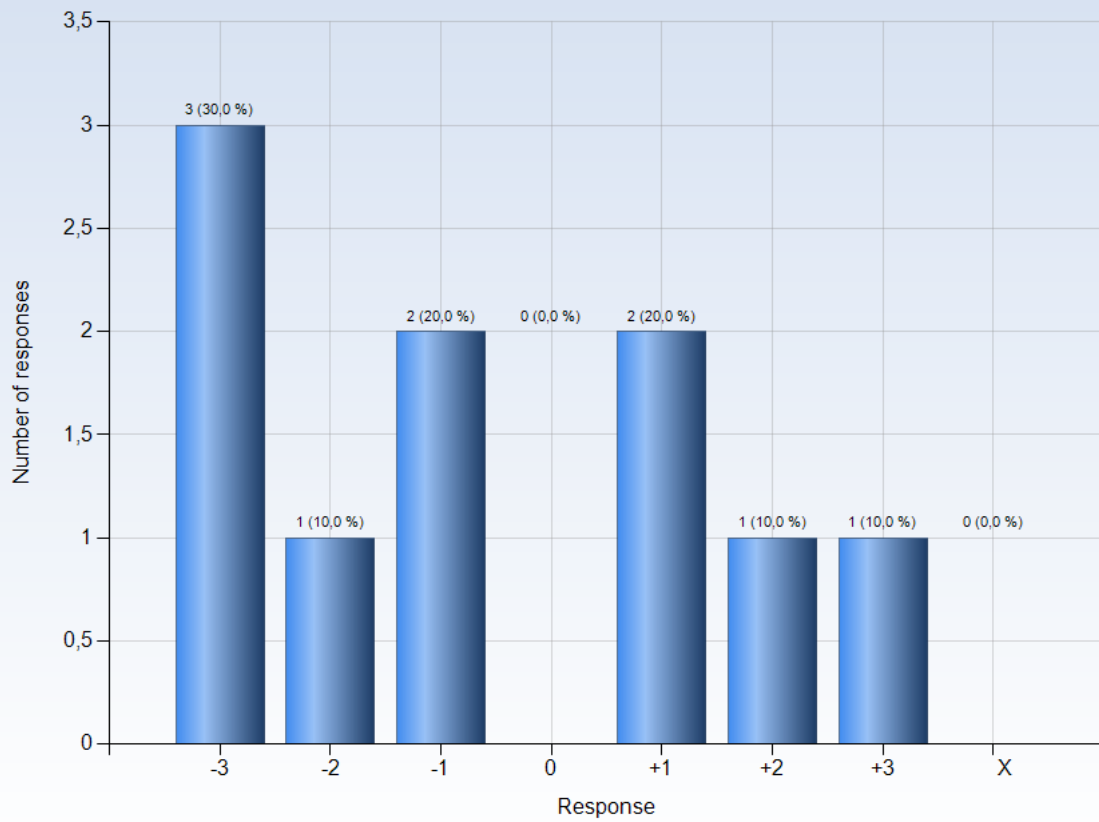
Comments

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

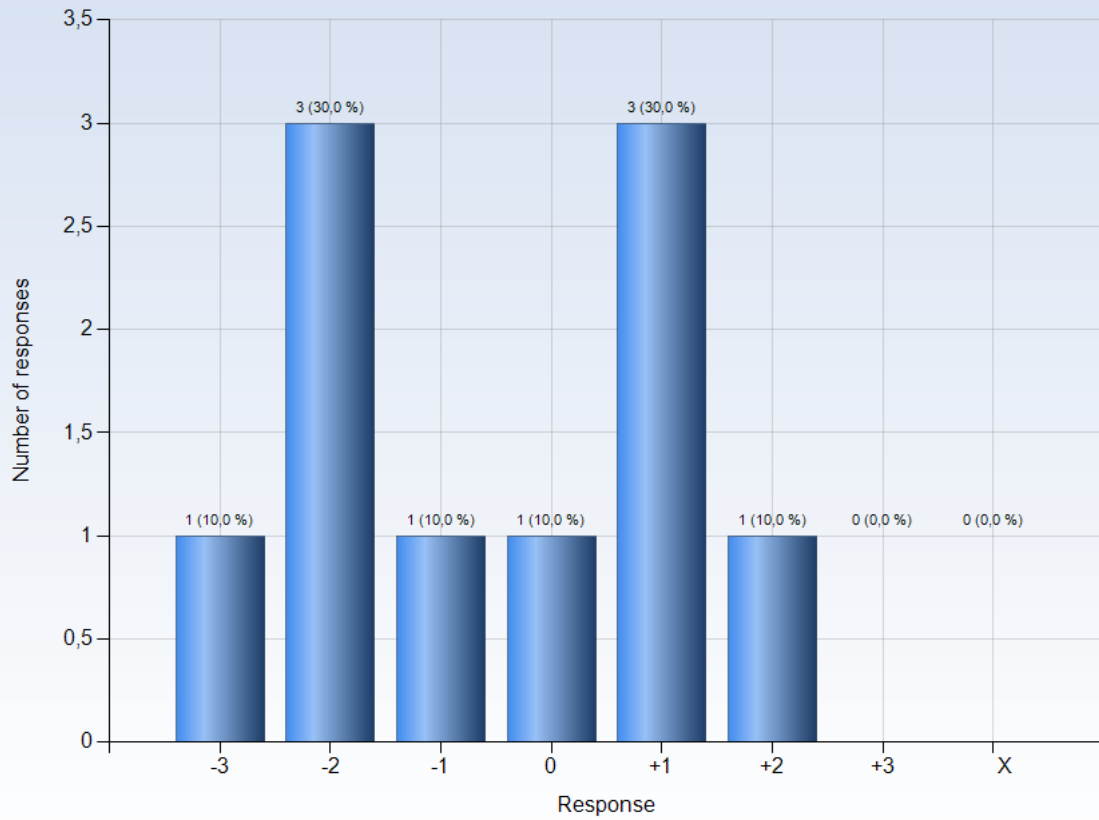


Comments

Comments (My response was: -3)

Very unclear what the grading criterias was. Needs more precision and distinction.

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



Comments

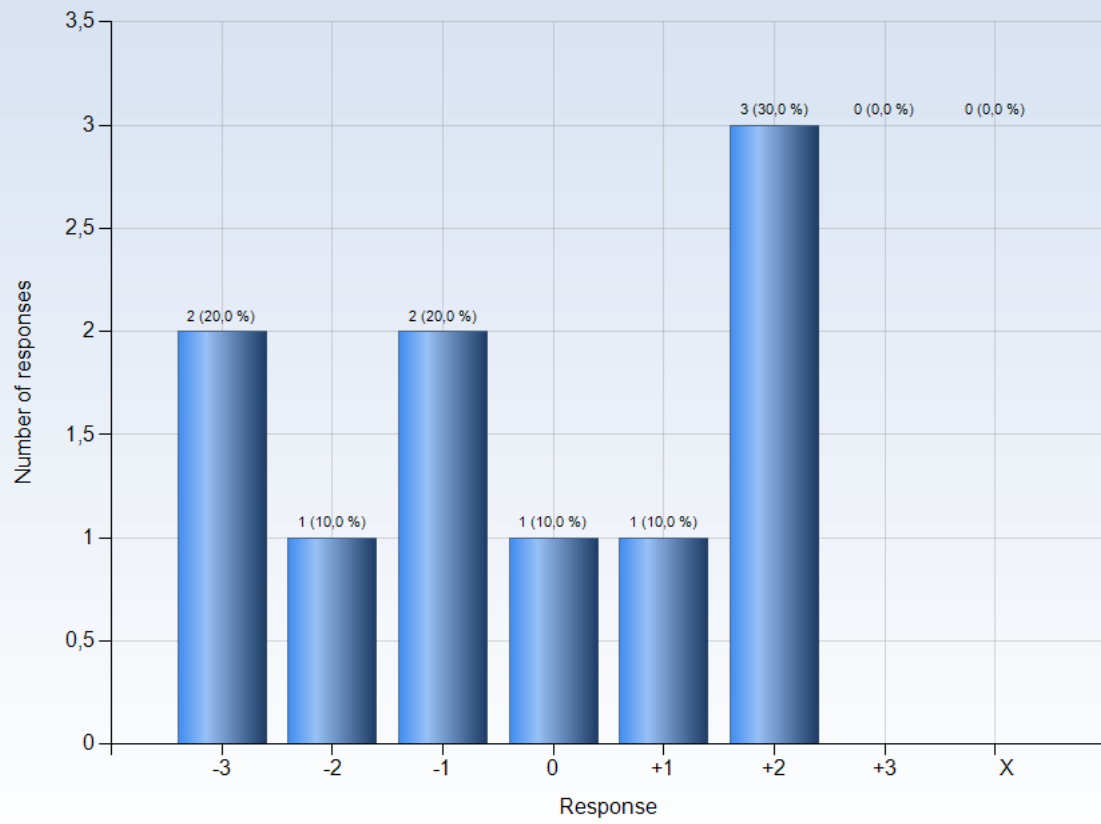
Comments (My response was: -2)

Some task were to vage, this made it difficult to understand what I was supposed to do. Information about important aspects of the course (project and exams) arrive to late.

Comments (My response was: +1)

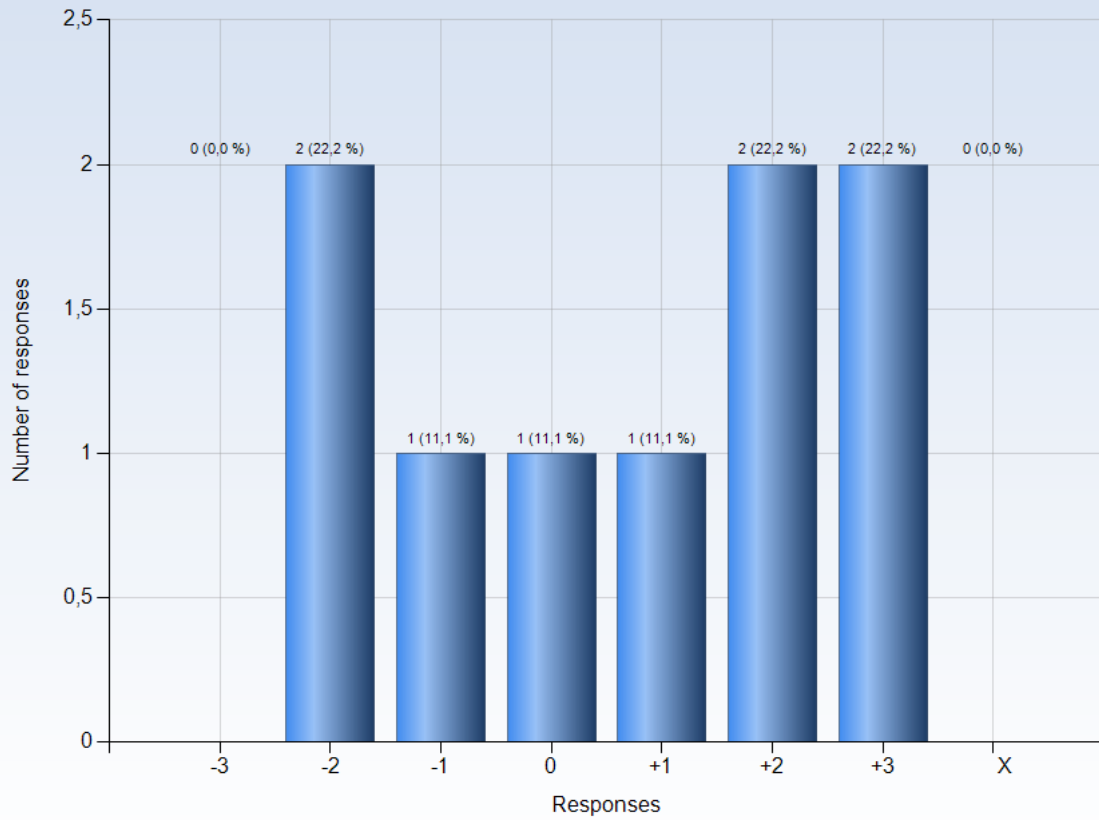
Quite! Teachers were good at answering concerns we had about the course and our supervisor were helpful during the project, but I dont think there were much things to give feedback on.

15. I could practice and receive feedback without being graded



Comments

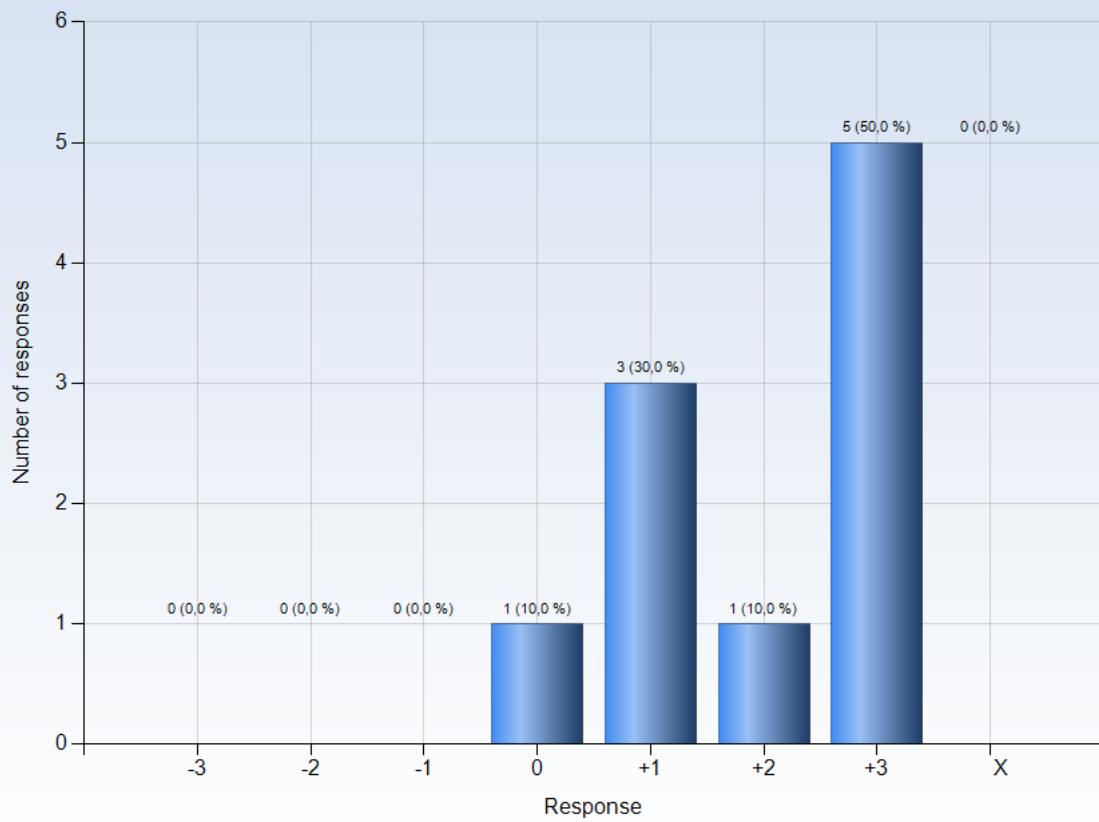
16. The assessment on the course was fair and honest



Comments

Comments (My response was: -2)
Without instructions on exams it is hard to prepare

17. My background knowledge was sufficient to follow the course

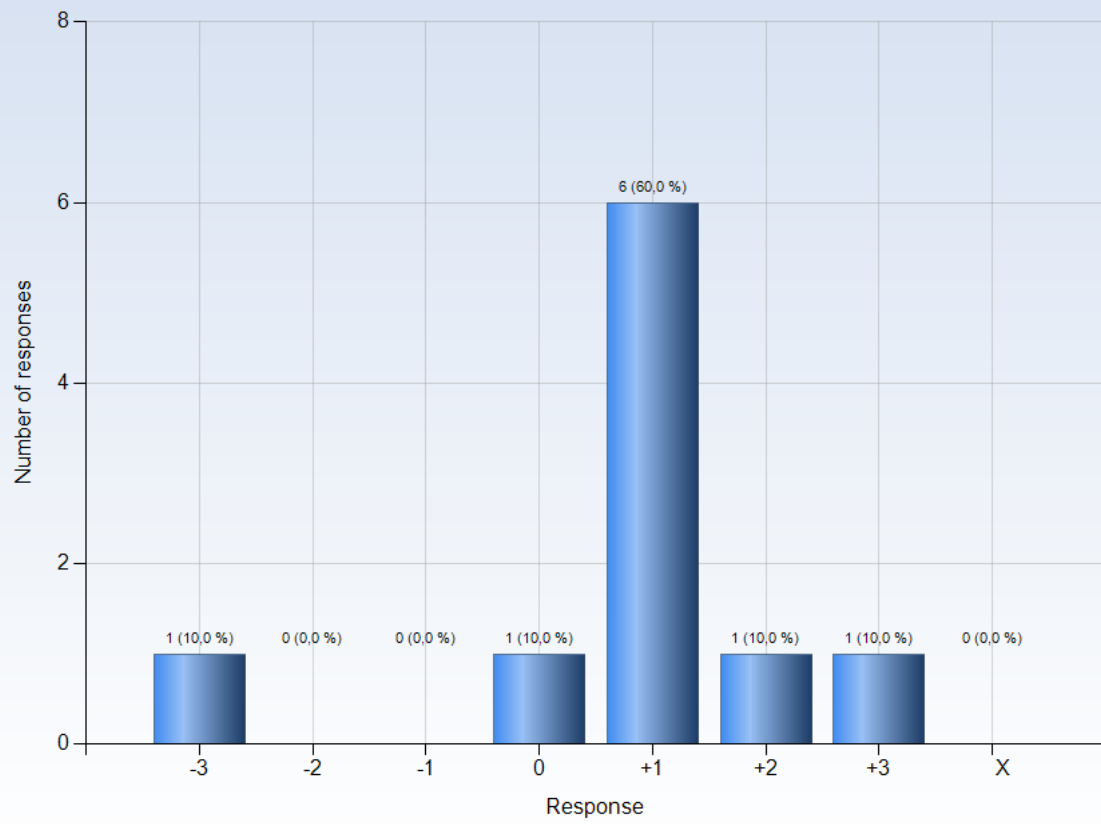


Comments

Comments (My response was: 0)

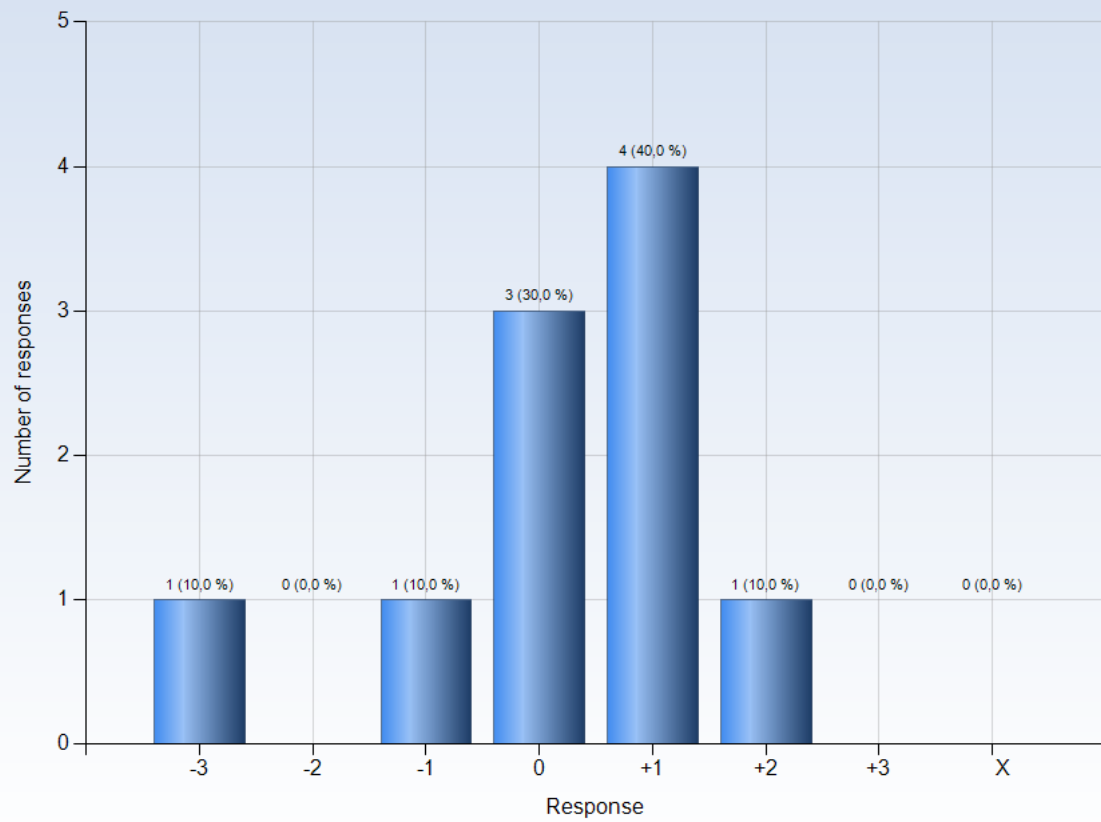
First time most of us heard any of the concepts. Sometimes there was a lack of explanation which made it hard to interpret certain things.

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



Comments

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

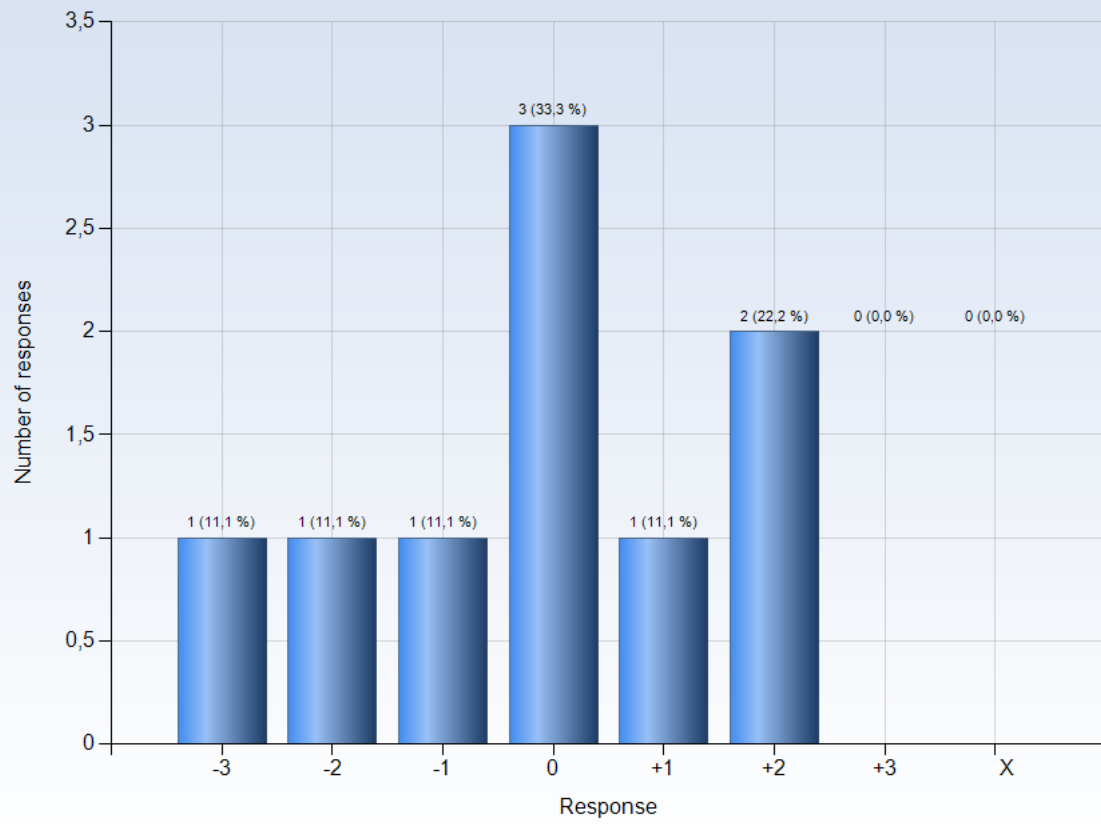


Comments

Comments (My response was: +1)

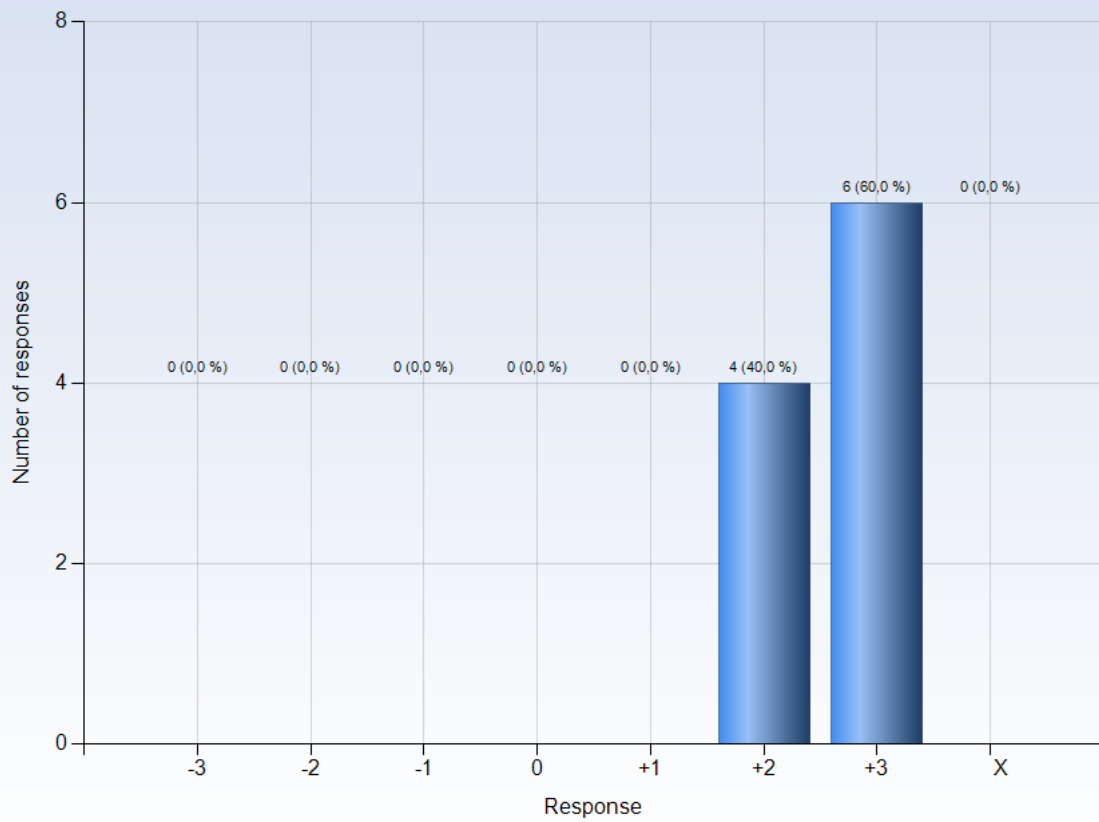
There was a huge gap between the excersices and project work. I would recommend to change the second excercise to include some of the difficulty one may experience while doing the project

20. I had opportunities to influence the course activities



Comments

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

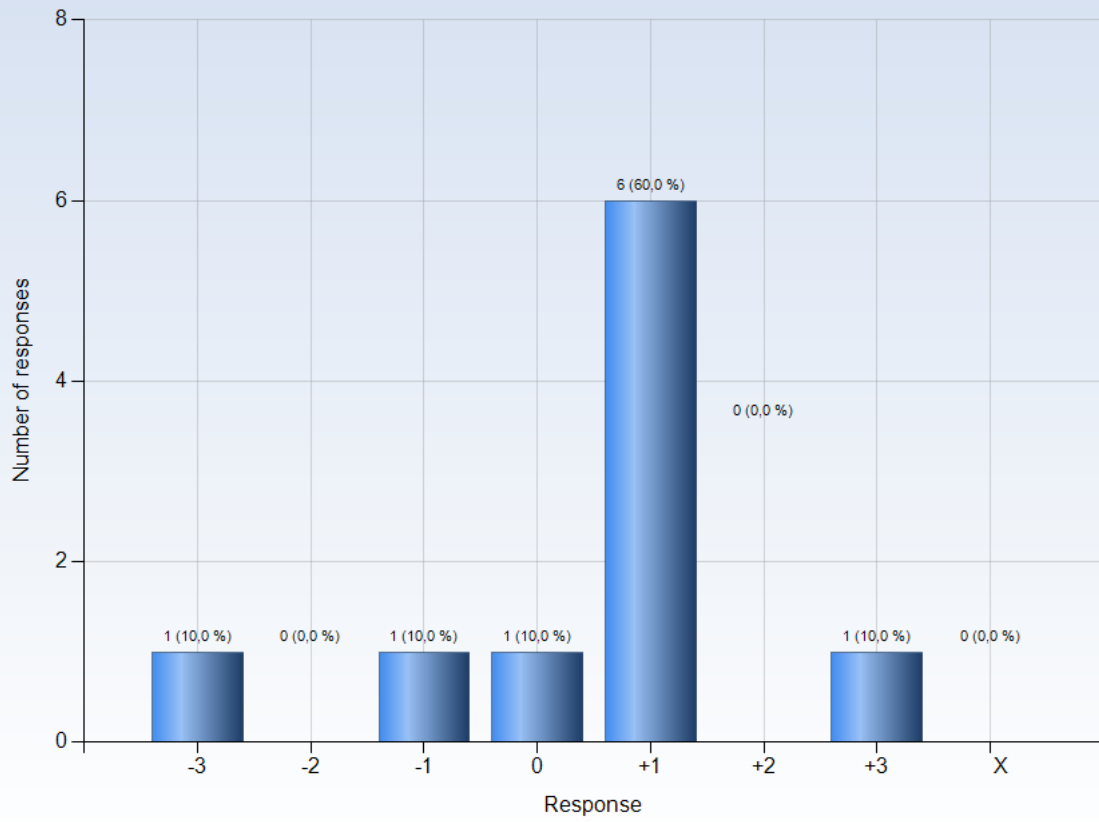


Comments

Comments (My response was: +3)

I liked that the course was designed in such a way that er were encouraged to collaborate.

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



Comments